

From: Belleman, Ann
To: [Tyler Abbott](#)
Subject: lynx workshop for WGFD
Date: Friday, October 10, 2014 7:33:54 AM

My two cents at this point ... it seems to be getting a little out of control and I think the most recent email from one of their employees to Bob L is the reason for my conclusion. I was thinking about the lynx workshop that the USFS put on post-release of the NRLMD in 2007 and it was a major production, provided in 3 different locations in the GYA. It was not conducted by the FWS; the NRLMD is their document and they're responsible for it.

That said, I agree with trying to help WGFD understand it and I just want to make sure we don't take on too much with a workshop. Depending on the agenda and who participates will dictate the level of work for us and at this point, I can see us getting in over our heads in a hurry.

We should talk.

Ann Belleman
U.S. Fish and Wildlife Service
Wyoming Ecological Svcs. Field Office
5353 Yellowstone Rd., Suite 308A
Cheyenne, WY 82009

ann_belleman@fws.gov

307-421-5839 (work cell)
307-772-2374 (FWS-Cheyenne)
218-529-5171 (EPA-MN)

From: Abbott, Tyler
To: [Belleman, Ann](mailto:Ann.Belleman@fws.gov)
Subject: Re: lynx workshop for WGFD
Date: Friday, October 10, 2014 7:53:22 AM

Yes, that list of participants started out long and continues to grow. Bob's latest message said he thought more FS and BLM folks should participate.

Maybe we should think about doing this only once, with a focus on the first part of the session on the basic information and biology/habitat, with the second part of the meeting being the process?

Yes, give me a call on my cell if you would like to discuss today-- sooner better than later.

On Fri, Oct 10, 2014 at 7:33 AM, Belleman, Ann <ann_belleman@fws.gov> wrote:

My two cents at this point ... it seems to be getting a little out of control and I think the most recent email from one of their employees to Bob L is the reason for my conclusion. I was thinking about the lynx workshop that the USFS put on post-release of the NRLMD in 2007 and it was a major production, provided in 3 different locations in the GYA. It was not conducted by the FWS; the NRLMD is their document and they're responsible for it.

That said, I agree with trying to help WGFD understand it and I just want to make sure we don't take on too much with a workshop. Depending on the agenda and who participates will dictate the level of work for us and at this point, I can see us getting in over our heads in a hurry.

We should talk.

Ann Belleman
U.S. Fish and Wildlife Service
Wyoming Ecological Svcs. Field Office
5353 Yellowstone Rd., Suite 308A
Cheyenne, WY 82009

ann_belleman@fws.gov

307-421-5839 (work cell)
307-772-2374 (FWS-Cheyenne)
218-529-5171 (EPA-MN)

--

Tyler Abbott, Deputy Field Supervisor
U.S. Fish and Wildlife Service
Wyoming Ecological Services Field Office
5353 Yellowstone Road, Suite 308A
Cheyenne, WY 82009
Office: (307) 772-2374 x 231

Cell: (307) 286-7242
tyler_abbott@fws.gov



From: Belleman, Ann
To: [Abbott, Tyler](mailto:Tyler.Abbott@fws.gov)
Subject: Re: lynx workshop for WGFD
Date: Friday, October 10, 2014 8:47:32 AM

Okay - will call shortly.

Ann Belleman
U.S. Fish and Wildlife Service
Wyoming Ecological Svcs. Field Office
5353 Yellowstone Rd., Suite 308A
Cheyenne, WY 82009

ann_belleman@fws.gov

307-421-5839 (work cell)
307-772-2374 (FWS-Cheyenne)
218-529-5171 (EPA-MN)

On Fri, Oct 10, 2014 at 7:53 AM, Abbott, Tyler <tyler_abbott@fws.gov> wrote:

Yes, that list of participants started out long and continues to grow. Bob's latest message said he thought more FS and BLM folks should participate.

Maybe we should think about doing this only once, with a focus on the first part of the session on the basic information and biology/habitat, with the second part of the meeting being the process?

Yes, give me a call on my cell if you would like to discuss today-- sooner better than later.

On Fri, Oct 10, 2014 at 7:33 AM, Belleman, Ann <ann_belleman@fws.gov> wrote:

My two cents at this point ... it seems to be getting a little out of control and I think the most recent email from one of their employees to Bob L is the reason for my conclusion. I was thinking about the lynx workshop that the USFS put on post-release of the NRLMD in 2007 and it was a major production, provided in 3 different locations in the GYA. It was not conducted by the FWS; the NRLMD is their document and they're responsible for it.

That said, I agree with trying to help WGFD understand it and I just want to make sure we don't take on too much with a workshop. Depending on the agenda and who participates will dictate the level of work for us and at this point, I can see us getting in over our heads in a hurry.

We should talk.

Ann Belleman
U.S. Fish and Wildlife Service
Wyoming Ecological Svcs. Field Office
5353 Yellowstone Rd., Suite 308A

Cheyenne, WY 82009

ann_belleman@fws.gov

307-421-5839 (work cell)

307-772-2374 (FWS-Cheyenne)

218-529-5171 (EPA-MN)

--

Tyler Abbott, Deputy Field Supervisor
U.S. Fish and Wildlife Service
Wyoming Ecological Services Field Office
5353 Yellowstone Road, Suite 308A
Cheyenne, WY 82009
Office: (307) 772-2374 x 231
Cell: (307) 286-7242
tyler_abbott@fws.gov



From: Belleman, Ann
To: [Gary Hanvey](#)
Subject: follow up to my phone message re: lynx workshop
Date: Friday, October 10, 2014 10:43:50 AM

I talked to Tyler this morning and he agreed that it's gotten out of hand and that the original intent was to help WGF D understand lynx and the mgmt. docs and facilitate communication. As a result, we felt that holding just one workshop would be better and it would be to cover basics. Another workshop could be added in the future, but for now, our commitment is the above only, and it will likely occur in Jan. or Feb. 2015.

Tyler needs to know if you will commit to helping us with this one workshop. Our thought is to incorporate your FLT presentation as the basis and add some things to that, such as process-type stuff. Tyler would facilitate the workshop.

If you're willing to help and need us to formally request it from your Supv. or whoever, we can write a letter. If you're not, then please let me know (although I hope that's not the answer - but would understand).

Talk soon - thanks!

Ann Belleman
U.S. Fish and Wildlife Service
Wyoming Ecological Svcs. Field Office
5353 Yellowstone Rd., Suite 308A
Cheyenne, WY 82009

ann_belleman@fws.gov

307-421-5839 (work cell)
307-772-2374 (FWS-Cheyenne)
218-529-5171 (EPA-MN)

From: Hanvey, Gary -FS
To: [Belleman, Ann](#)
Cc: Tyler_Abbott@fws.gov; [Bode, Pam -FS](#)
Subject: RE: follow up to my phone message re: lynx workshop
Date: Friday, October 10, 2014 4:50:01 PM

I will be willing to participate – it is in the best interest of the Forest (and to lynx conservation in general) that I do. The PPT presentation provides a good starting point. But, I would want to work on it some (add to/subtract from) to better suit the workshop audience and message we want to deliver.

From: Belleman, Ann [mailto:ann_belleman@fws.gov]
Sent: Friday, October 10, 2014 10:44 AM
To: Hanvey, Gary -FS
Subject: follow up to my phone message re: lynx workshop

I talked to Tyler this morning and he agreed that it's gotten out of hand and that the original intent was to help WGFD understand lynx and the mgmt. docs and facilitate communication. As a result, we felt that holding just one workshop would be better and it would be to cover basics. Another workshop could be added in the future, but for now, our commitment is the above only, and it will likely occur in Jan. or Feb. 2015.

Tyler needs to know if you will commit to helping us with this one workshop. Our thought is to incorporate your FLT presentation as the basis and add some things to that, such as process-type stuff. Tyler would facilitate the workshop.

If you're willing to help and need us to formally request it from your Supv. or whoever, we can write a letter. If you're not, then please let me know (although I hope that's not the answer - but would understand).

Talk soon - thanks!

Ann Belleman
U.S. Fish and Wildlife Service
Wyoming Ecological Svcs. Field Office
5353 Yellowstone Rd., Suite 308A
Cheyenne, WY 82009

ann_belleman@fws.gov

307-421-5839 (work cell)
307-772-2374 (FWS-Cheyenne)
218-529-5171 (EPA-MN)

This electronic message contains information generated by the USDA solely for the intended recipients. Any unauthorized interception of this message or the use or disclosure of the information it contains may violate the law and subject the violator to civil or criminal penalties. If you believe you have received this message in error, please notify the sender and

delete the email immediately.

From: Bode, Pam -FS
To: [Hanvey, Gary -FS](#); [Belleman, Ann](#)
Cc: Tyler_Abbott@fws.gov
Subject: RE: follow up to my phone message re: lynx workshop
Date: Tuesday, October 14, 2014 9:39:28 AM

We do not need formal letter requesting Gary's participation. Thanks for asking him to assist.

Pam Bode, Resources Staff Officer
Bridger-Teton National Forest
PO Box 1888, Jackson, WY 83001
Desk 307-739-5513 Cell 307-413-6941

From: Hanvey, Gary -FS
Sent: Friday, October 10, 2014 4:50 PM
To: Belleman, Ann
Cc: Tyler_Abbott@fws.gov; Bode, Pam -FS
Subject: RE: follow up to my phone message re: lynx workshop

I will be willing to participate – it is in the best interest of the Forest (and to lynx conservation in general) that I do. The PPT presentation provides a good starting point. But, I would want to work on it some (add to/subtract from) to better suit the workshop audience and message we want to deliver.

From: Belleman, Ann [mailto:ann_belleman@fws.gov]
Sent: Friday, October 10, 2014 10:44 AM
To: Hanvey, Gary -FS
Subject: follow up to my phone message re: lynx workshop

I talked to Tyler this morning and he agreed that it's gotten out of hand and that the original intent was to help WGFDD understand lynx and the mgmt. docs and facilitate communication. As a result, we felt that holding just one workshop would be better and it would be to cover basics. Another workshop could be added in the future, but for now, our commitment is the above only, and it will likely occur in Jan. or Feb. 2015.

Tyler needs to know if you will commit to helping us with this one workshop. Our thought is to incorporate your FLT presentation as the basis and add some things to that, such as process-type stuff. Tyler would facilitate the workshop.

If you're willing to help and need us to formally request it from your Supv. or whoever, we can write a letter. If you're not, then please let me know (although I hope that's not the answer - but would understand).

Talk soon - thanks!

Ann Belleman
U.S. Fish and Wildlife Service
Wyoming Ecological Svcs. Field Office
5353 Yellowstone Rd., Suite 308A
Cheyenne, WY 82009

ann_belleman@fws.gov

307-421-5839 (work cell)
307-772-2374 (FWS-Cheyenne)
218-529-5171 (EPA-MN)

This electronic message contains information generated by the USDA solely for the intended recipients. Any unauthorized interception of this message or the use or disclosure of the information it contains may violate the law and subject the violator to civil or criminal penalties. If you believe you have received this message in error, please notify the sender and delete the email immediately.

From: Zicari, Laury
To: [Phifer, Paul](#)
Cc: [Lowell Whitney](#); [Mark McCollough](#); [Spencer Simon](#); [Martin Miller](#)
Subject: Re: Lynx hcp tasks
Date: Wednesday, October 22, 2014 6:32:17 AM

Paul -- Mark is on page 30 of the 40 in the biological opinion. He is also answering Spencer's questions about the chronology. What else does this office need to do, please?

I have a "date" to talk to Meagan this afternoon about the outreach plan and we exchanged emails about the message needing to change -- we are not messaging that there is something to comment on -- the decision will be made, the plan will be implemented, what does that mean should be the message in my view. We will get that largely done this afternoon.

I understand Mark was working on permit condition questions per Lowell's request.

Are we squared away with the mitigation piece? It seemed to us in reviewing the draft MOU that the State didn't understand what they need to do -- it is not just cutting 6000 acres -- it is offsetting take by creating and maintaining that much HQHH. And they said something that leads us to think maybe it might already be there without any treatments -- that is, 36% of trees "mid successional" soft wood.

We would like to know about the software Lowell just purchased and need to get help for our FOIA and future paperwork associated with this project, before he goes to Alaska please.

I have training this morning; back in the office at 1:30. I also have to work on a schedule for the salmon recovery plan in prep for a meeting with NOAA and Peter Lamothe tomorrow.

On Tue, Oct 21, 2014 at 9:07 PM, Phifer, Paul <paul_phifer@fws.gov> wrote:

Folks - where do we stand on some of these issues? I hear that we won't get the final MOU until Thursday. We need this document for the final package, so it doesn't seem like we can make a permit decision until Friday. What's the status of the BO? The permit was sent to the state for their review today. I am working on the NEPA stuff and will get back to Lowell ASAP. Marty and I were tied up in an NEC meeting all day today. I know he will be working on the findings doc tomorrow.

Thanks, Paul

Paul Phifer, PhD
Assistant Regional Director - Ecological Services
Northeast Region
Dept of the Interior
US Fish and Wildlife Service
413.253.8698 work
413.687.4764 cell

On Mon, Oct 20, 2014 at 2:44 PM, Phifer, Paul <paul_phifer@fws.gov> wrote:

Sorry, I am getting this out late. Last week, we discussed -

- 1) Ask Dave to review permit - we did and he can't
- 2) Mark and Anne prioritize BO and get to Paul by COB Tuesday
- 3) Spencer review permit and get to Paul by COB Tuesday
- 4) Lowell get Paul EA, FONSI and RTC by COB Tuesday - he already sent me the EA and FONSI. Is the RTC part of what you sent me?
- 5) FO is reviewing outreach materials and need their review and final copy by COB Tuesday
- 6) Marty is working on the FOIA
- 7) Marty is finalizing the findings doc and will get to Paul by COB Tuesday

Do we have the ITP yet from the State? If not, I will ask Jim Connolly who is here now.

Thanks, Paul

Paul Phifer, PhD
Assistant Regional Director - Ecological Services
Northeast Region
Dept of the Interior
US Fish and Wildlife Service
413.253.8698 work
413.687.4764 cell

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 111
Fax 866-3351
Cell 207-949-0561

From: Belleman, Ann
To: Solberg-Schwab, Lisa
Subject: Re: Good news!
Date: Wednesday, October 22, 2014 7:49:25 AM

Hi Lisa,

Forgot to respond. Yes, we're planning on one lynx workshop, primarily for WGFD's benefit, but it won't be until Jan. or Feb. most likely. The emphasis will be education and not to discuss actual management of habitat, as they'll likely de-rail the discussion if we go there. I'm guessing Tyler would want you to attend.

I am planning to stay in touch, so no worries about that! Gary called me yesterday and wanted to briefly discuss your selection and specifics of what you'll work on (gsg bio but how much of my stuff). I told him we don't have details worked out yet but guessing you'll pick up my lynx workload but don't know about grizzly bear. My current Sup, Nathan, has been helping me out - at least on the Upper Green BO - so has learned a lot about grizz; maybe he'll take at least some of that on. Plus, it's hard to know if it'll finally be delisted or not in the next 1-1/2 to 2 years. I know Servheen (FWS grizz coord.) is working on another proposed rule to delist. Grizz are relatively easy, so I recommend focusing on lynx. There are plenty of smart grizz people in the GYA but only Gary when it comes to lynx (plus me and one other person I'll put you in touch with). And yes, the main issue is aspen, or conifer-encroached aspen, and more for mule deer, as elk have been over-objective, so the discussion is really about mule deer and aspen.

I also told Gary the need for you both to find time asap to discuss lynx stuff. As I mentioned, he's looking for a change, although has been for the last 1+ year and the ideal job hasn't come up, until this week. So it'll be important to pick his brain - in particular NRLMD VEG S6 and forestry-related info and WUIs. I know a lot about these issues and am always ready to help, but he's the more knowledgeable of the two of us!

Ann Belleman
U.S. Fish and Wildlife Service
Wyoming Ecological Svcs. Field Office
5353 Yellowstone Rd., Suite 308A
Cheyenne, WY 82009

ann_belleman@fws.gov

307-421-5839 (work cell)
307-772-2374 (FWS-Cheyenne)
218-529-5171 (EPA-MN)

On Tue, Oct 21, 2014 at 10:56 AM, Solberg-Schwab, Lisa <lsolbergschwab@blm.gov> wrote:

I spoke to Gary yesterday and he mentioned that the BT may be doing a workshop for WGFD in December. He didn't say much just that there are problems, so I imagine its the same issues of elk habitat treatments. and had wondered if I would be able to go. i'll have to talk with tyler about it when the time comes.

i'm sure the office space and so forth will work out, i'm not too worried about that actually.

even though the lynx road is going to be hard, at least i'm on a better side of the table and mostly away from the oil and gas nonsense. although the grouse part of my job will probably keep me in that fray.

i have family in duluth, I don't know if i ever told you that. you'll have to give me your personal contact info. and i'll let you know the next time i visit once you make the final transition, I'd like to keep in touch if you would like to as well. my aunt lives there with her husband, I should introduce you two. I think you have a lot in common actually.

talk to you soon.

Lisa

On Tue, Oct 21, 2014 at 9:24 AM, Belleman, Ann <ann_belleman@fws.gov> wrote:

The NRLA/NRLMD BiOp and the new LCAS attached. The details will come, so don't be overwhelmed. The important thing is you already know the basics, or they'll come back to you quickly, and you have field knowledge. The biggest change is VEG S6 and understanding that. But Gary can help you. Maybe you can schedule some time with him in Jackson once you're on "our" dime, or maybe he'll be in Pinedale for some upcoming meeting.

Ann Belleman
U.S. Fish and Wildlife Service
Wyoming Ecological Svcs. Field Office
5353 Yellowstone Rd., Suite 308A
Cheyenne, WY 82009

ann_belleman@fws.gov

307-421-5839 (work cell)
307-772-2374 (FWS-Cheyenne)
218-529-5171 (EPA-MN)

On Tue, Oct 21, 2014 at 9:18 AM, Belleman, Ann <ann_belleman@fws.gov> wrote:

We'll talk soon, but a couple of quick responses ...

First - Mikaela is a cutie! Thanks for sending the photo!

Re: office location - I've been teleworking 3 days at home and 2 days in a cubie at the EPA lab in Duluth. I don't have set days I work one place or the other - it all depends on what calls I have, etc. (This arrangement was based on Mark S's desire that I have some physical connection w/a federal building.) I have a work cell that I will turn in next June and also a landline at home; I also have a work vehicle and maybe you'll get it next - I'll return it likely this winter. So as you and Tyler consider your work location, and just in case NRCS doesn't work out, there are ways to get out of the office. If you get stuck at BLM, could you have your cubie moved away from nose people? Just some thoughts.

Re: lynx stuff - we'll talk - but in the meantime, yes, there are still the minimal thresholds in the new LCAS; however, it did away with the words "standards" and "guidelines." I'll forward it - I printed it out, as it's not available in hard copy. The NRLMD is more of a challenge and I suggest you start getting acquainted w/VEG S6 as well as the FWS' biological opinion, which says some things that aren't in the NRLMD. You'll need to pay attention to WUIs in particular, which is an upcoming issue. I'm guessing you can get hard copies of the EIS - you'll need Vol. I - and the ROD. I've got a lot of lynx stuff here that I'll bring back to WY in Jan. or Feb.; I could also mail some of it beforehand. Again, we'll talk.

Finally, you'll definitely want to spend some time with Gary Hanvey asap to discuss the lynx stuff. He's a wealth of info, is one of the old timers when it comes to lynx, and may not be around for long - hard to say. I know he's been considering both a new job and retirement (please don't share this), so when he goes, so does most of the gritty type of integrity of the NT's biology program. He really knows forestry and that's what he can also help with.

Ann Belleman
U.S. Fish and Wildlife Service
Wyoming Ecological Svcs. Field Office
5353 Yellowstone Rd., Suite 308A
Cheyenne, WY 82009

ann_belleman@fws.gov

307-421-5839 (work cell)
307-772-2374 (FWS-Cheyenne)
218-529-5171 (EPA-MN)

On Tue, Oct 21, 2014 at 8:51 AM, Solberg-Schwab, Lisa <lsolbergschwab@blm.gov> wrote:

Ann,

It is good news, i'm really excited. I've been wanting to get back to the service ever since I got to WY :)

My baby girls name is Mikaela she was born on July 10 she is three months old now. I've attached a photo.

I start my new job on Nov 16. Tyler told me about your transition, i'm glad we will have time for you to get me up to speed and mentor me. when i worked for the service before I was only working on informal consultations so I know i'll have a lot of questions about that let alone the details about the species. i know it'll be different from the other side of consultation. and i for sure need your mentorship on the LAU calculations and so forth. i haven't read through the new lcas so maybe the thresholds are not in there anymore?

anyway lots for us to catch up on, i'm hoping tyler negotiates for me to have a spot

over at the NRCS, I don't really want to get into arguments with the pinedale bios when they overhear my conversations with you.

thanks for all your help and friendship over the years. I know you and pauline helped me a lot in getting this job!!

Lisa

On Tue, Oct 21, 2014 at 8:00 AM, Belleman, Ann <ann_belleman@fws.gov> wrote:
Hi Lisa,

I hope you're doing well and enjoying parenthood! I heard you had a baby girl but don't know her name - or - age (a few months?).

Also, congratulations on the new job! This is terrific news and I'm thrilled you'll be with "us" now! Imagine we'll talk soon. At this point, I don't know how much of my work you'll pick up ... some, most? Both lynx and grizz? But we'll all know soon enough! You may've heard that I'm switching to part-time for WY FO sometime in January and will work part-time for MN-WI FO, then switch to full time for MN-WI next June - leaving WY altogether. This change hopefully will give us both time to transition/get up to speed on stuff.

I don't know your work schedule or when you'll start w/FWS, but let me know and I can call you whenever it's convenient to talk.

Cheers - Ann

Ann Belleman
U.S. Fish and Wildlife Service
Wyoming Ecological Svcs. Field Office
5353 Yellowstone Rd., Suite 308A
Cheyenne, WY 82009

ann_belleman@fws.gov

307-421-5839 (work cell)
307-772-2374 (FWS-Cheyenne)
218-529-5171 (EPA-MN)

--

Lisa M. Solberg Schwab
Wildlife Biologist, Wyoming State Office
WY SG 9 Plan Project Manager
located at the Pinedale Field Office
P.O. Box 768, 1625 W. Pine Street
Pinedale, WY 82941
(307) 367-5340

--

Lisa M. Solberg Schwab
Wildlife Biologist, Wyoming State Office
WY SG 9 Plan Project Manager
located at the Pinedale Field Office
P.O. Box 768, 1625 W. Pine Street
Pinedale, WY 82941
(307) 367-5340

From: [Belleman, Ann](#)
To: [Bush, Jodi](#)
Subject: Re: ACTION NEEDED: Next steps for lynx recovery
Date: Monday, December 08, 2014 12:02:01 PM

Hi Jodi,

What's the deadline for getting these letters out? Prior to end of January 2015 or sooner?

Thanks - Ann

Ann Belleman
U.S. Fish and Wildlife Service
Wyoming Ecological Svcs. Field Office
5353 Yellowstone Rd., Suite 308A
Cheyenne, WY 82009

ann_belleman@fws.gov

307-421-5839 (work cell)
307-772-2374 (FWS-Cheyenne)
218-529-5171 (EPA-MN)

On Mon, Dec 8, 2014 at 11:30 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

ALL> This email is specific to **Lynx Recovery: the 5-year Review and Recovery Planning**. If you are NOT the appropriate person for this email please forward this email and reply to me so I may correct our mailing list for these topics.

The Service is moving forward on the court's order to complete Lynx Recovery by January 2018. Prior to initiation of the recovery planning process, we will be completing a Five-year Review. This Review will update the status and revise the threat assessment and determine whether the status of the DPS has changed since the time of its listing.

Since a 5-year review begins with gathering the best available scientific and commercial data regarding the species, we intend to disseminate interested party letters to our State, Federal and Tribal partners. An example is attached. **I am requesting that you send this letter out to your Office's specific State, Tribal and Federal partners.** You may send out the pdf version with my signature or edit the letterhead and signature for your area. Please leave the contact information the same.

In addition, in order to facilitate this process, we will post a NEWS RELEASE on our Regional Lynx page notifying the public that the Canada Lynx DPS is under review and we are requesting any relevant information we should consider in that Review.

After reviewing and considering the best available scientific and commercial data regarding the species, the Service will recommend whether a change in the Federal classification of the listed species is warranted.

Upon completion of a 5-year review, the Service could make four possible recommendations:

- Reclassify the species from threatened to endangered (uplist);
- Remove the species from the List (delist); or
- Maintain the species' current classification.

If the species is uplisted or maintained in its current classification, we will immediately proceed with the recovery planning process.

If delisting is found to be warranted and we determine such a plan will not promote the conservation of the species, We may consider whether the species is exempt from the Act's recovery planning requirement. Such a determination would require a finding signed by the Director.

As we move forward in the process, we will engage you all (or other appropriate contacts identified by your office) in monthly calls to keep you updated on our progress. In addition, we will provide an opportunity for each office to review the draft document and provide clarifications and edits. We have drafted a Project Plan which includes both the 5-year Review process as well as the Recovery Planning. We expect to finalize this by the end of January 2015.

We expect to wrap-up the 5-Year Review process by early June 2015. Thank you for your prompt action on these Interested party letters. If you have questions or require clarifications please give me a call. Thanks again. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

From: [Swartzendruber, Joyce - NRCS, Bozeman, MT](mailto:Swartzendruber.Joyce@NRCS.gov)
To: Jodi_Bush@fws.gov
Subject: Re: Next Steps for Lynx Recovery Planning
Date: Monday, December 08, 2014 12:02:50 PM

Thanks Jodi. Kale and staff will take lead on this. I am retiring January 2, and don't know who will be acting yet. Will notify you when it is announced.

Sent from my iPad

On Dec 8, 2014, at 11:46 AM, "Bush, Jodi" <jodi_bush@fws.gov> wrote:

The U.S. Fish and Wildlife Service (Service) will be conducting a Five-Year Status review under the Endangered Species Act of 1973, as amended (Act), for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx Canadensis*). The Canada lynx DPS (lynx) was listed as threatened under the Act in 2000 (Federal Register, 65:16502; March 24, 2000). We published a Recovery outline for the species on September 14, 2005. This Review will update the status of the Canada lynx DPS and revise its threat assessment and determine whether the status of the DPS has changed since the time of its listing. The Five-Year Review will clarify the extent, magnitude and nature of the threats to the species so that Recovery Planning may target those specific threats

Over the next several months, we will be gathering and analyzing available information on the lynx as part of our process to conduct a Five-Year Review for the species. We will use the best scientific and commercial data available in the development of our report, which ensures that our review will be as accurate and complete as possible. We would like to complete the Five-Year Review by June of 2015.

With this letter, we are providing notification to interested parties that we are initiating the Five-Year Review process for the lynx and are seeking your input to ensure we have the best available information upon which to inform our review.

The attached letter identifies what our specific information requests are and a timeline for its delivery. Thank you for your interest in the conservation of Canada lynx. If you have any questions or would like additional information please give me a call.

Please share within your agencies. Thanks JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

<Canada Lynx Interested party 12_2014_sf.pdf>

This electronic message contains information generated by the USDA solely for the intended recipients. Any unauthorized interception of this message or the use or disclosure of the information it contains may violate the law and subject the violator to civil or criminal penalties. If you believe you have received this message in error, please notify the sender and delete the email immediately.



Gifford, Krishna <krishna_gifford@fws.gov>

Fwd: ACTION NEEDED: Next steps for lynx recovery

1 message

Gifford, Krishna <krishna_gifford@fws.gov>

Mon, Dec 8, 2014 at 1:35 PM

To: Martin Miller <Martin_Miller@fws.gov>, Mary Parkin <mary_parkin@fws.gov>

Cc: Jodi Bush <jodi_bush@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>

Marty & Mary - Please see Jodi's email below about the lynx 5-year review and recovery planning process, including gathering info from the States.

Jodi - Mary is our Recovery Coordinator and should be your primary Region 5 RO contact for these actions. Marty should be included as the TE Chief.

Thanks,
Krishna

Krishna Gifford

Candidate & Classification Coordinator
U.S. Fish and Wildlife Service - Northeast Region
Endangered Species Program
300 Westgate Center Dr.
Hadley, MA 01035
413-253-8619 (v); 413-253-8482 (f)

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Mon, Dec 8, 2014 at 1:30 PM

Subject: ACTION NEEDED: Next steps for lynx recovery

To: Beth Forbus <beth_forbus@fws.gov>, Justin Shoemaker <justin_shoemaker@fws.gov>, Bridget Fahey <bridget_fahey@fws.gov>, Sarah Fierce <sarah_fierce@fws.gov>, Kit Hershey <kit_hershey@fws.gov>, Bryon Holt <bryon_holt@fws.gov>, Jeff Krupka <jeff_krupka@fws.gov>, Michelle Eames <michelle_eames@fws.gov>, Steve Duke <steve_duke@fws.gov>, Rebecca Toland <rebecca_toland@fws.gov>, Sarah Quamme <sarah_quamme@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Tamara Smith <tamara_smith@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Mark McCollough <mark_mccollough@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Tyler Abbott <Tyler_Abbott@fws.gov>, Ben Conard <ben_conard@fws.gov>, Leslie Ellwood <leslie_ellwood@fws.gov>, Kurt Broderdorp <kurt_broderdorp@fws.gov>, Kate Novak <kate_novak@fws.gov>

ALL> This email is specific to **Lynx Recovery: the 5-year Review and Recovery Planning**. If you are NOT the appropriate person for this email please forward this email and reply to me so I may correct our mailing list for these topics.

The Service is moving forward on the court's order to complete Lynx Recovery by January 2018. Prior to initiation of the recovery planning process, we will be completing a Five-year Review. This Review will update the status and revise the threat assessment and determine whether the status of the DPS has changed since the time of its listing.

Since a 5-year review begins with gathering the best available scientific and commercial data regarding the species, we intend to disseminate interested party letters to our State, Federal and Tribal partners. An example is attached. **I am requesting that you send this letter out to your Office's specific State, Tribal and Federal partners.** You may send out the pdf version with my signature or edit the letterhead and signature for your area. Please leave the contact information the same.

In addition, in order to facilitate this process, we will post a NEWS RELEASE on our Regional Lynx page notifying the public that the Canada Lynx DPS is under review and we are requesting any relevant information we should consider in that Review.

After reviewing and considering the best available scientific and commercial data regarding the species, the Service will recommend whether a change in the Federal classification of the listed species is warranted.

Upon completion of a 5-year review, the Service could make four possible recommendations:

- Reclassify the species from threatened to endangered (uplist);
- Remove the species from the List (delist); or
- Maintain the species' current classification.

If the species is uplisted or maintained in its current classification, we will immediately proceed with the recovery planning process.

If delisting is found to be warranted and we determine such a plan will not promote the conservation of the species, we may consider whether the species is exempt from the Act's recovery planning requirement. Such a determination would require a finding signed by the Director.

As we move forward in the process, we will engage you all (or other appropriate contacts identified by your office) in monthly calls to keep you updated on our progress. In addition, we will provide an opportunity for each office to review the draft document and provide clarifications and edits. We have drafted a Project Plan which includes both the 5-year Review process as well as the Recovery Planning. We expect to finalize this by the end of January 2015.

We expect to wrap-up the 5-Year Review process by early June 2015. Thank you for your prompt action on these Interested party letters. If you have questions or require clarifications please give me a call. Thanks again. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

2 attachments

 **Canada Lynx Interested party 12_2014_sf.pdf**
69K

 **Canada Lynx Interested party 12_2014_sf.docx**
116K

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FWS/R6/MTESO/Canada Lynx Five-year Rvw

December 8, 2014

Dear Interested Party:

The U.S. Fish and Wildlife Service (Service) will be conducting a Five-Year Status review under the Endangered Species Act of 1973, as amended (Act), for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx Canadensis*). The Canada lynx DPS (lynx) was listed as threatened under the Act in 2000 (Federal Register, 65:16502; March 24, 2000). We published a Recovery outline for the species on September 14, 2005.

Lynx are highly specialized predators of snowshoe hare. The North American distribution of the lynx overlaps much of the range of the snowshoe hare and both are strongly associated with boreal forests. Within the contiguous United States, the lynx occurs in the boreal forest of New England, the western Great Lakes, the Rocky Mountains and Cascade Mountains in the West. Detailed biological and threat assessment information for the Canada lynx can be found online at: <http://ecos.fws.gov/speciesProfile/profile/speciesProfile?sPCODE=A073>

Over the next several months, we will be gathering and analyzing available information on the lynx as part of our process to conduct a Five-Year Review for the species. We will use the best scientific and commercial data available in the development of our report, which ensures that our review will be as accurate and complete as possible. We would like to complete the Five-Year Review by June of 2015.

With this letter, we are providing notification to interested parties that we are initiating the Five-Year Review process for the lynx and are seeking your input to ensure we have the best available information upon which to inform our review. At this time, we are seeking information and data regarding the following items:

- General information concerning the taxonomy, biology, ecology, genetics, and status of the lynx in the contiguous United States;
- Specific information on the conservation status of lynx in the contiguous United States, including information on distribution, abundance, and population trends;
- Specific information on threats to lynx in the contiguous United States, including: (i) the present or threatened destruction, modification, or curtailment of its habitat or range; (ii) overutilization for commercial, recreational, scientific, or educational purposes; (iii)

Dear Interested Party

2

disease or predation; (iv) the inadequacy of existing regulatory mechanisms; and (v) other natural or manmade factors affecting its continued existence;

- Specific information on conservation actions that have improved Canada lynx habitat or reduced threats to lynx in the contiguous United States;
- Habitat selection, use, and any changes or trends in the amount and distribution of lynx habitat in the contiguous United States.

We will accept new information throughout this process; however, we respectfully request that you provide any pertinent information as soon as possible and not later than February 1, 2015, to ensure we have adequate time to consider it during our review. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this review and may be made public. Information should be submitted to Jim Zelenak of the Montana Ecological Services Field Office at:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your interest in the conservation of Canada lynx. If you would like additional information or have questions about the species, please contact Jim Zelenak at (406) 449-5225 extension. 220 (jim_zelenak@fws.gov).

Sincerely,



Jodi Bush
Field Office Supervisor

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FWS/R6/MTESO/Canada Lynx Five-year Rvw

December 8, 2014

Dear Interested Party:

The U.S. Fish and Wildlife Service (Service) will be conducting a Five-Year Status review under the Endangered Species Act of 1973, as amended (Act), for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx Canadensis*). The Canada lynx DPS (lynx) was listed as threatened under the Act in 2000 (Federal Register, 65:16502; March 24, 2000). We published a Recovery outline for the species on September 14, 2005.

Lynx are highly specialized predators of snowshoe hare. The North American distribution of the lynx overlaps much of the range of the snowshoe hare and both are strongly associated with boreal forests. Within the contiguous United States, the lynx occurs in the boreal forest of New England, the western Great Lakes, the Rocky Mountains and Cascade Mountains in the West. Detailed biological and threat assessment information for the Canada lynx can be found online at: <http://ecos.fws.gov/speciesProfile/profile/speciesProfile?sPCODE=A073>

Over the next several months, we will be gathering and analyzing available information on the lynx as part of our process to conduct a Five-Year Review for the species. We will use the best scientific and commercial data available in the development of our report, which ensures that our review will be as accurate and complete as possible. We would like to complete the Five-Year Review by June of 2015.

With this letter, we are providing notification to interested parties that we are initiating the Five-Year Review process for the lynx and are seeking your input to ensure we have the best available information upon which to inform our review. At this time, we are seeking information and data regarding the following items:

- General information concerning the taxonomy, biology, ecology, genetics, and status of the lynx in the contiguous United States;
- Specific information on the conservation status of lynx in the contiguous United States, including information on distribution, abundance, and population trends;
- Specific information on threats to lynx in the contiguous United States, including: (i) the present or threatened destruction, modification, or curtailment of its habitat or range; (ii) overutilization for commercial, recreational, scientific, or educational purposes; (iii)

Dear Interested Party

2

disease or predation; (iv) the inadequacy of existing regulatory mechanisms; and (v) other natural or manmade factors affecting its continued existence;

- Specific information on conservation actions that have improved Canada lynx habitat or reduced threats to lynx in the contiguous United States;
- Habitat selection, use, and any changes or trends in the amount and distribution of lynx habitat in the contiguous United States.

We will accept new information throughout this process; however, we respectfully request that you provide any pertinent information as soon as possible and not later than February 1, 2015, to ensure we have adequate time to consider it during our review. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this review and may be made public. Information should be submitted to Jim Zelenak of the Montana Ecological Services Field Office at:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your interest in the conservation of Canada lynx. If you would like additional information or have questions about the species, please contact Jim Zelenak at (406) 449-5225 extension. 220 (jim_zelenak@fws.gov).

Sincerely,



Jodi Bush
Field Office Supervisor

From: [Zicari, Laury](#)
To: [Paul Phifer](#); [Spencer Simon](#); [Martin Miller](#); [Mark McCollough](#)
Subject: Fwd: ACTION NEEDED: Next steps for lynx recovery
Date: Monday, December 08, 2014 5:03:30 PM

As you may recall, the Maine IFW commented during the CH revision FR notice and comment period that changes should be made to how the lynx was listed. This will likely be an opportunity for them to make their case; meanwhile sounds like we have some lynx ITP issues on our plate in the near future as well, as well as the administrative record FOIA.

----- Forwarded message -----

From: **McCollough, Mark** <mark_mccollough@fws.gov>
Date: Mon, Dec 8, 2014 at 4:59 PM
Subject: Re: ACTION NEEDED: Next steps for lynx recovery
To: "Parkin, Mary" <mary_parkin@fws.gov>, Laury Zicari <laury_zicari@fws.gov>
Cc: "Gifford, Krishna" <krishna_gifford@fws.gov>, Martin Miller <Martin_Miller@fws.gov>, Jodi Bush <jodi_bush@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>

Mary - Do you want the field offices to distribute the email from R6 concerning the lynx 5-year review in this email chain, or is this something the RO intends to do? Mark

On Mon, Dec 8, 2014 at 3:09 PM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Thanks for the heads-up, Krishna.
Mary

On Mon, Dec 8, 2014 at 1:35 PM, Gifford, Krishna <krishna_gifford@fws.gov> wrote:

Marty & Mary - Please see Jodi's email below about the lynx 5-year review and recovery planning process, including gathering info from the States.

Jodi - Mary is our Recovery Coordinator and should be your primary Region 5 RO contact for these actions. Marty should be included as the TE Chief.

Thanks,
Krishna

Krishna Gifford

Candidate & Classification Coordinator
U.S. Fish and Wildlife Service - Northeast Region
Endangered Species Program
300 Westgate Center Dr.
Hadley, MA 01035
413-253-8619 (v); 413-253-8482 (f)

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Mon, Dec 8, 2014 at 1:30 PM

Subject: ACTION NEEDED: Next steps for lynx recovery

To: Beth Forbus <beth_forbus@fws.gov>, Justin Shoemaker <justin_shoemaker@fws.gov>, Bridget Fahey <bridget_fahey@fws.gov>, Sarah Fierce <sarah_fierce@fws.gov>, Kit Hershey <kit_hershey@fws.gov>, Bryon Holt <bryon_holt@fws.gov>, Jeff Krupka <jeff_krupka@fws.gov>, Michelle Eames <michelle_eames@fws.gov>, Steve Duke <steve_duke@fws.gov>, Rebecca Toland <rebecca_toland@fws.gov>, Sarah Quamme <sarah_quamme@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Tamara Smith <tamara_smith@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Mark McCollough <mark_mccollough@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Tyler Abbott <Tyler_Abbott@fws.gov>, Ben Conard <ben_conard@fws.gov>, Leslie Ellwood <leslie_ellwood@fws.gov>, Kurt Broderdorp <kurt_broderdorp@fws.gov>, Kate Novak <kate_novak@fws.gov>

ALL> This email is specific to **Lynx Recovery: the 5-year Review and Recovery Planning**. If you are NOT the appropriate person for this email please forward this email and reply to me so I may correct our mailing list for these topics.

The Service is moving forward on the court's order to complete Lynx Recovery by January 2018. Prior to initiation of the recovery planning process, we will be completing a Five-year Review. This Review will update the status and revise the threat assessment and determine whether the status of the DPS has changed since the time of its listing.

Since a 5-year review begins with gathering the best available scientific and commercial data regarding the species, we intend to disseminate interested party letters to our State, Federal and Tribal partners. An example is attached. **I am requesting that you send this letter out to your Office's specific State, Tribal and Federal partners.** You may send out the pdf version with my signature or edit the letterhead and signature for your area. Please leave the contact information the same.

In addition, in order to facilitate this process, we will post a NEWS RELEASE on our Regional Lynx page notifying the public that the Canada Lynx DPS is under review and we are requesting any relevant information we should consider in that Review.

After reviewing and considering the best available scientific and commercial data regarding the species, the Service will recommend whether a change in the Federal classification of the listed species is warranted.

Upon completion of a 5-year review, the Service could make four possible recommendations:

- Reclassify the species from threatened to endangered (uplist);
- Remove the species from the List (delist); or
- Maintain the species' current classification.

If the species is uplisted or maintained in its current classification, we will immediately proceed with the recovery planning process.

If delisting is found to be warranted and we determine such a plan will not promote the conservation of the species, We may consider whether the species is exempt from the Act's recovery planning requirement. Such a determination would require a finding signed by the Director.

As we move forward in the process, we will engage you all (or other appropriate contacts identified by your office) in monthly calls to keep you updated on our progress. In addition, we will provide an opportunity for each office to review the draft document and provide clarifications and edits. We have drafted a Project Plan which includes both the 5-year Review process as well as the Recovery Planning. We expect to finalize this by the end of January 2015.

We expect to wrap-up the 5-Year Review process by early June 2015. Thank you for your prompt action on these Interested party letters. If you have questions or require clarifications please give me a call. Thanks again. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 111
Fax 866-3351
Cell 207-949-0561

From: [Miller, Martin](#)
To: [Racey, Meagan](#)
Subject: Re: lynx status review invitation to provide input to USFWS Region 6
Date: Tuesday, December 16, 2014 7:37:50 AM

Yes. I'm available all morning except ES staff meeting.

On Mon, Dec 15, 2014 at 5:21 PM, Racey, Meagan <meagan_racey@fws.gov> wrote:

Hi Marty! Do you have a minute to check in in the morning? Paul asked that EA develop a strategy for dealing with communications on this issue. This is an opportunity to get FWS and MDIFW on the same page again.

However, there are a few issues that I think will need continued discussion internally and with MDIFW before we can address them in the strategy--and of course they're the same issues in the media....how do we discuss the increase in trapped lynx? what's the population of lynx in Maine? how will the upcoming survey be conducted, and can we use that information to making a listing decision?

Meagan

----- Forwarded message -----

From: **Zicari, Laury** <laury_zicari@fws.gov>
Date: Mon, Dec 15, 2014 at 5:15 PM
Subject: Fwd: lynx status review invitation to provide input to USFWS Region 6
To: Paul Phifer <paul_phifer@fws.gov>, Martin Miller <Martin_Miller@fws.gov>, Spencer Simon <spencer_simon@fws.gov>
Cc: Meagan Racey <meagan_racey@fws.gov>

I am aware that we were instructed to not contact stakeholders regarding lynx matters but this came through from region 6 at the end of last week, and Mark and I with Marty's concurrence thought it was important to get this to the Maine Department of Inland Fisheries and Wildlife as soon as possible what with the upcoming holidays and the short turn around from Region 6. It is a form letter from Region 6; Tom's office noticed a couple of typos and corrected them but otherwise this is what we were asked to send to contacts.

----- Forwarded message -----

From: **Zicari, Laury** <laury_zicari@fws.gov>
Date: Mon, Dec 15, 2014 at 5:12 PM
Subject: lynx status review invitation to provide input to USFWS Region 6
To: "Connolly, James" <James.Connolly@maine.gov>
Cc: Mark McCollough <mark_mccollough@fws.gov>

I wanted to get this to you asap as I know of your agency's interest in this; we just received the request from Region 6. THANKS

--

Laury Zicari

Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 111
Fax 866-3351
Cell 207-949-0561

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 111
Fax 866-3351
Cell 207-949-0561

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog, Conserving the nature of the Northeast](#)

--

Martin Miller, Chief, Division of Endangered Species, Northeast Region, U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035, 413-253-8615

From: [McCollough, Mark](#)
To: [Parkin, Mary](#); [DJ Monette](#)
Subject: Re: Service initiating a 5-Year Review for the Canada lynx
Date: Tuesday, December 16, 2014 11:49:05 AM

Mary - I sent this letter out to our full lynx mailing list, including tribal biologists. Let me know if there are groups missed (Congressional delegation, federal agencies we consult with, etc. were not notified). Mark

On Tue, Dec 16, 2014 at 10:17 AM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Thanks, Mark!

On Tue, Dec 16, 2014 at 9:58 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:

All:

The Service is moving forward on the court's order to complete Lynx Recovery by January 2018. Prior to initiation of the recovery planning process, we will be completing a Five-year Review. This Review will update the status and revise the threat assessment and determine whether the status of the DPS has changed since the time of its listing.

Since a 5-year review begins with gathering the best available scientific and commercial data regarding the species, we are requesting your input. Please see the attached letter inviting your input by February 1, 2015.

In addition, in order to facilitate this process, Region 6 will post a NEWS RELEASE on our Regional Lynx page notifying the public that the Canada Lynx DPS is under review and we are requesting any relevant information we should consider in that Review.

We expect to wrap-up the 5-Year Review process by early June 2015. Thank you for your prompt attention. If you have questions or require clarifications please give me a call.

Thanks again.

Mark McCollough

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:

Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [Racey, Meagan](#)
To: [Miller, Martin](#)
Subject: Re: Service initiating a 5-Year Review for the Canada lynx
Date: Tuesday, December 16, 2014 12:19:09 PM

Thanks - I'm waiting still on R6 to find out if they announced it or not

On Tue, Dec 16, 2014 at 11:09 AM, Miller, Martin <martin_miller@fws.gov> wrote:
MEFO just announced the review.

----- Forwarded message -----

From: **McCullough, Mark** <mark_mccollough@fws.gov>
Date: Tue, Dec 16, 2014 at 9:58 AM
Subject: Service initiating a 5-Year Review for the Canada lynx
To: Adam Vashon <AdamVashon@aphis.usda.gov>, Alan Hutchinson <alan@fsmaine.org>, Barry Burguson <wpbnb@huber.com>, Bill Krohn <wkrohn@maine.edu>, Bob Cordes <Robert.Cordes@maine.gov>, Charlie Todd <charlie.todd@maine.gov>, Chuck Hulsey <charles.hulsey@maine.gov>, "Connolly, James" <James.Connolly@maine.gov>, Dan Harrison <harrison@maine.edu>, Daryl Dejoy <daryld@midmaine.com>, Doug Kane <douglas.kane@maine.gov>, Fred Corey <fcorey@micmac-nsn.gov>, Fred Corey <fcorey@micmachealth.org>, Henning Stabens <Henning.Stabins@plumcreek.com>, Jay Clement <Jay.L.Clement@nae02.usace.army.mil>, Jean hoekwater <jean.hoekwater@maine.gov>, Jeff Norment <Jeff.Norment@me.usda.gov>, Jen Burns <jburns@maineaudubon.org>, Jen Vashon <jennifer.vashon@maine.gov>, Joe Wiley <joe.wiley@maine.gov>, John Gilbert <gilbert.john@jdirving.com>, John Banks <john.banks@penobscotnation.org>, John Kanter <jkanter@wildlife.nh.gov>, John Sewell <johnsewell44@hotmail.com>, John Sewell <johnsewell@passamaquoddy.com>, Judy Camuso <Judy.Camuso@maine.gov>, Justina Ray <jray@wcs.org>, Kristin Peet <Kristin.Peet@penobscotnation.org>, Laury Zicari <laury_zicari@fws.gov>, Leighlan Prout <lprout@fs.fed.us>, Leslie Rowse <lrowse@fs.fed.us>, Marcia McKeague <mckeaguema@katahdinpaper.com>, Mark Doty <mark.doty@plumcreek.com>, Nancy Sferra <nsferra@tnc.org>, Patrick Strauch <patrick@maineforest.org>, Paul Casey <paul_casey@fws.gov>, Rich Hoppe <richard.hoppe@maine.gov>, Sally Stockwell <sstockwell@maineaudubon.org>, Samantha Horn-Olsen <Samantha.Horn-Olsen@maine.gov>, Sharri Venno <envplanner@maliseets.com>, Shawn Haskell <Shawn.Haskell@maine.gov>, Shawn McKinney <shawn.mckinney@maine.edu>, Erin Simons-Legaard <erin.simons@maine.edu>, Mollie Matteson <mmatteson@biologicaldiversity.org>
Cc: Mary Parkin <mary_parkin@fws.gov>, Martin Miller <martin_miller@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>

All:

The Service is moving forward on the court's order to complete Lynx Recovery by January 2018. Prior to initiation of the recovery planning process, we will be completing a Five-year Review. This Review will update the status and revise the threat assessment and determine whether the status of the DPS has changed since the time of its listing.

Since a 5-year review begins with gathering the best available scientific and commercial data regarding the species, we are requesting your input. Please see the attached letter inviting your input by February 1, 2015.

In addition, in order to facilitate this process, Region 6 will post a NEWS RELEASE on our Regional Lynx page

notifying the public that the Canada Lynx DPS is under review and we are requesting any relevant information we should consider in that Review.

We expect to wrap-up the 5-Year Review process by early June 2015. Thank you for your prompt attention. If you have questions or require clarifications please give me a call.

Thanks again.

Mark McCollough

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Martin Miller, Chief, Division of Endangered Species, Northeast Region, U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035, 413-253-8615

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog. Conserving the nature of the Northeast](#)

From: [McCollough, Mark](#)
To: [Zelenak, Jim](#)
Subject: Re: Service initiating a 5-Year Review for the Canada lynx
Date: Tuesday, December 16, 2014 1:56:47 PM

Jim - We have a new lynx habitat model courtesy of Erin Simons doctoral work at UMaine (recently published in JWM). However, she did not extend the model to the entire state of Maine. She is under contract with us to at least apply the model to all of northern Maine. Thus, I don't have a good sense of the quality of habitat in some areas of the state south of the critical habitat. We'll have a better idea by later winter/spring, 2015 for a much larger area of the state when Erin finishes her contract.

In my opinion, lynx have expanded into some "peripheral" habitats, particularly when hares peaked about 2006. As we described in the ch rule, its possible that peak hares combined with hard winters in 2008 and 2009 allowed lynx to occupy habitats that had relatively high hare densities, but that were formerly occupied by bobcats. I believe this could have happened in VT, NH, western ME and eastern ME. We haven't surveyed Maine to know what has happened in recent years, but surveys last winter in NH found no lynx - only bobcats as if they had reoccupied these peripheral areas. I would be surprised if lynx held on in eastern Maine and parts of western Maine as well because these areas were always where Maine's highest bobcat populations were found. Perhaps the state will do some survey in these areas this winter to confirm or prove this hypothesis wrong.

I recall debating a population-based recovery objective when we drafted the recovery plan outline. At the time (and to this date) we still lack a method of estimating populations.

Mark

On Tue, Dec 16, 2014 at 12:21 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Thanks, Mark. I saw that you caught a couple of the typos when you converted it to MEFO letterhead - thanks. Mostly the other issues were no big deal (*canadensis* had a capital "C", a few areas of unnecessary redundancy, some inconsistency in use of caps, etc.).

All the rest sounds good. Unfortunately, I know little about lynx population surveys - not sure anyone really has an answer about how to best (and most efficiently) gather data that would support meaningful pop. size and trend estimates. If that is indeed the case, it will limit (preclude?) our ability to develop quantifiable demographic recovery criteria - something Lori N. apparently struggled with in the Recovery Outline, and why we may need to develop/rely on surrogates (habitat quantity and quality perhaps).

Another hypothesis I wondered about was whether lynx in Maine are starting to move into "peripheral" areas with more regularity as habitat quality begins the projected succession-induced decline in the core area and, if so, whether lynx in those areas are more susceptible to trapping and maybe vehicle collision because they are hungry and on the move. Your thoughts on that?

We should have gone to law school...

Cheers!

Jim

On Tue, Dec 16, 2014 at 9:47 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:

Jim: We corrected a few typos from your original letter. My apologies if there were any other mistakes in our letter that we sent out today. I thought we looked it over pretty carefully before sending. Please let me know if there is anything of concern that I need to know about.

We provided the State with Sect 6 funding this year to resume lynx snow tracking surveys. The last surveys were completed in 2006. As you know, snow tracking surveys are valuable for evaluating distribution, and the data, if collected in a statistically rigorous way, can be used for habitat modeling. I do not think the surveys, at least as they have been done in the past, tell us much about the population - which is what the State infers in the newspaper articles. For example, we don't know if a township that has 10 lynx track intercepts represents 10 lynx or one lynx that crossed the road 10 times.

Laury is trying to reach the State this morning and ask that the University and Service be invited to meetings concerning the survey design. We told Federal Aid that we would support Sect 6 funding, but strongly suggest that the Service and University be involved in the study design so we can get the most value-added products from this survey.

I'd be interested in anything you know about lynx population surveys. One thought I had was to take our latest lynx habitat models for northern Maine; stratify the townships into high, medium, and low probability; then select a stratified, random sample of townships for survey. (Last time we surveyed about 60 townships over a 3 year period.). If a subset of high, medium, and low townships were identified for repeated surveys and collecting genetic samples to identify the number of individuals, then we may be able to develop a population estimate with confidence limits. I'm not a biometrician, and would hope the University could lend some support in developing statistical advice. My hope is the survey could also be designed so the data can be used for future habitat modeling.

Bottom line is that I don't think we or the state currently have data to evaluate lynx populations or trends. We are hearing anecdotes about trappers seeing lynx tracks, road mortality, etc. Alternative hypotheses as to why so many lynx have been trapped this season include 1) increased reporting rates now that a incidental take permit is in place, 2) increased number of trappers now that a permit is in place (some trappers told us they would avoid trapping in northern Maine until a permit was issued), or 3) increased trapper effort (trappers setting more traps or trapping longer = >trap nights). I haven't checked on fur prices, but high fur prices can motivate trappers to go to northern Maine for marten and fisher. The State should have data on the latter hypotheses. The reporting rate issue is difficult to evaluate, but as we were finishing the ITP we used some of the State's data to conduct an independent analyses that indicated that the actual number of lynx trapped could be several times greater than reported.

Likewise, I am consumed with the FOIA here on all records on trapping and snaring HCPs going back to 2002.

Happy Holidays, Mark

On Tue, Dec 16, 2014 at 10:11 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Thanks, Mark.

Wish I'd been given a chance to review/edit that letter before it was sent - there are some very unnecessary mistakes/typos, which always aggravate me, but especially when my name is listed as the contact.....

Oh well, sometimes expediency takes precedence, I suppose.

How are things there? I see Jennifer suggesting in the papers that maybe the Maine lynx population is still growing (i.e., did not peak in 2006 or so, as others have suggested). Your thoughts?

I'm still working on FOIAs and admin. record for the CH rule/lawsuits, but looking forward to some time away from the office over the holidays.

Hope all is well there.

Jim

On Tue, Dec 16, 2014 at 7:58 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:

All:

The Service is moving forward on the court's order to complete Lynx Recovery by January 2018. Prior to initiation of the recovery planning process, we will be completing a Five-year Review. This Review will update the status and revise the threat assessment and determine whether the status of the DPS has changed since the time of its listing.

Since a 5-year review begins with gathering the best available scientific and commercial data regarding the species, we are requesting your input. Please see the attached letter inviting your input by February 1, 2015.

In addition, in order to facilitate this process, Region 6 will post a NEWS RELEASE on our Regional Lynx page notifying the public that the Canada Lynx DPS is under review and we are requesting any relevant information we should consider in that Review.

We expect to wrap-up the 5-Year Review process by early June 2015. Thank you for your prompt attention. If you have questions or require clarifications please give me a call.

Thanks again.

Mark McCollough

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [Miller, Martin](#)
To: [Racey, Meagan](#)
Cc: [Laury Zicari](#); [Mary Parkin](#); [Kyla Hastie](#); [Christine Eustis](#); [Terri Edwards](#); [DJ Monette](#); [Tom Chapman](#)
Subject: Re: Lynx press release
Date: Friday, January 09, 2015 4:45:58 PM

Thanks, Meagan. Looks good. I have no edits.

On Fri, Jan 9, 2015 at 4:40 PM, Racey, Meagan <meagan_racey@fws.gov> wrote:

Hi all - I've tweaked R6's press release to be more appropriate for us - see attached. Please let me know by COB Monday if you have any edits to make. Sorry for the abbreviated process. R6 surnamed the original this week, and I plan to share a draft with them Monday as a heads up.

I'll receive media and Laury will be our spokesperson. We're planning to have the joint messages ready in time. IFW sent their edits today, and we have some additional changes to take care of with them. Let me know if you have questions or concerns.

Meagan

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog, Conserving the nature of the Northeast](#)

--

Martin Miller, Chief, Division of Endangered Species, Northeast Region, U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035, 413-253-8615

From: [Christine Eustis](#)
To: [Racey, Meagan](#)
Cc: [Miller, Martin](#); [Laury Zicari](#); [Mary Parkin](#); [Kyla Hastie](#); [Terri Edwards](#); [DJ Monette](#); [Tom Chapman](#)
Subject: Re: Lynx press release
Date: Monday, January 12, 2015 4:55:51 PM

Thanks for looping me in Meagan.

Laury, understand you spoke with Paul about doing some proactive Congressional outreach on lynx. I'll be back in the office tomorrow, let's talk about timing and get something scheduled.

Thanks

Christine

Sent from my iPad

On Jan 12, 2015, at 11:42 AM, "Racey, Meagan" <meagan_racey@fws.gov> wrote:

Thanks, Marty! We'll do that. Kyla and I were just talking about the same thing earlier.

On Mon, Jan 12, 2015 at 11:40 AM, Miller, Martin <martin_miller@fws.gov> wrote:

Meagan - I'm thinking we should drop the reference to New Hampshire in the second paragraph. I'm not sure what role NH will play in recovery planning. I think it's best to refer just to New England. Marty

On Mon, Jan 12, 2015 at 9:14 AM, Racey, Meagan <meagan_racey@fws.gov> wrote:

Hi all - I sent the wrong version Friday.

On Fri, Jan 9, 2015 at 4:40 PM, Racey, Meagan <meagan_racey@fws.gov> wrote:

Hi all - I've tweaked R6's press release to be more appropriate for us - see attached. Please let me know by COB Monday if you have any edits to make. Sorry for the abbreviated process. R6 surnamed the original this week, and I plan to share a draft with them Monday as a heads up.

I'll receive media and Laury will be our spokesperson. We're planning to have the joint messages ready in time. IFW sent their edits today, and we have some additional changes to take care of with them. Let me know if you have questions or concerns.

Meagan

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog, Conserving the nature of the Northeast](#)

|

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog, Conserving the nature of the Northeast](#)

--

Martin Miller, Chief, Division of Endangered Species, Northeast Region, U.S.
Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035,
413-253-8615

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog, Conserving the nature of the Northeast](#)

From: [Racey, Meagan](#)
To: [Parkin, Mary](#); [Martin Miller](#)
Subject: Re: Lynx press release
Date: Monday, January 12, 2015 5:01:34 PM

Thanks, Mary! I saw your note about the time frame - I don't think there was a Federal Register notice. It might be something that you check in with R6 about. I wasn't sure if that date from R6 was a hard and fast deadline or not, to be honest.

On Mon, Jan 12, 2015 at 4:02 PM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi Meagan and all,

I made a few comments on the news release. Recognizing the late hour, please feel free to use or dismiss as you see fit!

Cheers,
Mary

On Mon, Jan 12, 2015 at 9:14 AM, Racey, Meagan <meagan_racey@fws.gov> wrote:

Hi all - I sent the wrong version Friday.

On Fri, Jan 9, 2015 at 4:40 PM, Racey, Meagan <meagan_racey@fws.gov> wrote:

Hi all - I've tweaked R6's press release to be more appropriate for us - see attached. Please let me know by COB Monday if you have any edits to make. Sorry for the abbreviated process. R6 surnamed the original this week, and I plan to share a draft with them Monday as a heads up.

I'll receive media and Laury will be our spokesperson. We're planning to have the joint messages ready in time. IFW sent their edits today, and we have some additional changes to take care of with them. Let me know if you have questions or concerns.

Meagan

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog, Conserving the nature of the Northeast](#)

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog, Conserving the nature of the Northeast](#)

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog, Conserving the nature of the Northeast](#)

From: [McCollough, Mark](#)
To: [Zelenak, Jim](#)
Subject: Re: Lynx 5-year review letter from ME
Date: Wednesday, January 28, 2015 10:32:45 AM

Thanks Jim. Interesting comments. Mark

On Wed, Jan 28, 2015 at 10:15 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

FYI

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [McCollough, Mark](#)
To: [Zelenak, Jim](#)
Subject: Re: Canada lynx
Date: Tuesday, February 03, 2015 11:38:50 AM

Thanks Jim. I hope we can talk once all the comments come in. Mark

On Tue, Feb 3, 2015 at 11:31 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

FYI

----- Forwarded message -----

From: **Sarah J Medina** <smedina@sevenislands.com>

Date: Fri, Jan 30, 2015 at 3:56 PM

Subject: Canada lynx

To: Jim_Zelenak@fws.gov

Re: Endangered species listing, recovery planning.

Please accept the attached.

Sarah J. Medina

Seven Islands Land Company

P. O. Box 1168

Bangor ME 04402-1168

smedina@sevenislands.com

207-947-0541

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [McCollough, Mark](#)
To: [Zelenak, Jim](#)
Cc: [Laury Zicari](#)
Subject: Re: lynx listing responses from Maine
Date: Tuesday, February 03, 2015 2:50:56 PM

Thanks Jim. When we responded to MDIFW last September, one of endangered species biologists was asked to review the lynx genetics papers that have been published since the listing in 2000. We could find no convincing genetics argument (or gap in range argument) to demonstrate significance of the the ME population as a DPS. We would be glad to help summarize this and other information for Maine as you develop the status review. Mark

On Tue, Feb 3, 2015 at 1:06 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

We can talk any time you like, Mark. Like you, I'm not inclined to let pretty photos, claims from trappers, or other anecdotal information influence our review/listing decisions for lynx. I believe McKelvey et al. 2008 made a very compelling case for the inappropriateness of relying on anecdotal information to determine lynx range, occupancy, distribution, or population status.

I am most interested in what the most reliable science says regarding (1) the status of lynx and habitats in the DPS sub-populations now versus what they were at the time of listing, (2) the extent to which the threat for which the DPS was listed either (a) continues to threaten the DPS or (b) has been addressed and ameliorated since the time of listing, and (3) whether there are additional/new threats that we believe are reasonably likely to threaten the persistence of the DPS in the reasonably foreseeable future.

Or something like that...

On Tue, Feb 3, 2015 at 10:47 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:

Jim:

Laury and I would like to talk to you once we have all the responses from Maine.

I read the comments from the Seven Islands and Maine Forest Products Council. They are quite interesting and contain some beautiful pictures, but I hope that the Service does not make population inferences or listing decisions based on anecdote. Based on the best available science from UMaine, we know that lynx habitat is peaking or recently peaked and based on MDIFW's telemetry research that lynx populations can be reach 10 lynx/100 km² in the very best quality habitat. But high quality lynx habitat is a relatively small portion of the landscape. Erin is under contract by our office to apply her habitat model to the remainder of the lynx critical habitat, and in a few months we could actually calculate that.

I recognize many of the lynx reports from foresters as coming from areas identified by UMaine lynx modeling as high quality habitats. Lynx are readily approachable, curious, relatively tame and thus, a number of beautiful photographs are provided.

However, we cannot make listing decisions based on anecdote. If someone in 1985 said, "I see bald eagles everywhere, therefore we should delist," would we have? If someone says, "I see piping plovers every time I visit beaches in southern Maine, therefore we should delist" should we? If someone reports that "Furbish's lousewort occurs all along

the banks of the St. John River, so we should delist" should we?

We can discuss the science concerning Maine habitat and habitat trends and make some scientifically-based projections on lynx trends past, present, and future (see Erin Simon's dissertation and ms in JWM). We can discuss the validity of MDIFW's population estimate of 750 to 1000 adults that peaked in about 2010. We could even have Erin Simons develop population estimates past, present, and future based on her habitat analysis.

Curiously, since the two lynx were killed in traps last fall there seems to be a lot of claims made concerning lynx numbers and population trends.

We heard similar comments about lynx numbers at the Maine Trappers Association meeting on Sunday. I suspect there is a reason why we are hearing similar comments from several sectors...

Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115

Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [Zelenak, Jim](#)
To: sympa@npogroups.org
Cc: [Laury Zicari](#); [Mark McCollough](#)
Subject: Re: Comments for review ie: Canada Lynx
Date: Tuesday, February 03, 2015 3:34:03 PM

Thanks for your comments, Daryl, and your continuing interest in lynx conservation.

No decisions have yet been made, and when we complete the 5-year review, we will certainly make it available to the public. A recommendation to delist is just one of three possible outcomes of the review; the other two are a recommendation to maintain the DPS's current threatened status or to uplist it to endangered. Despite the variety of opinions expressed recently in the media, especially with regard to trapping issues in Maine, I have not become aware of any "political full court press" to delist.

Jim

On Sat, Jan 31, 2015 at 7:08 AM, Daryl DeJoy <activist@midmaine.com> wrote:

Hello Jim,

I am hoping there will be a process for the public to review as to how the decisions made here were arrived at. We can find little reason to de-list lynx, and yet we are concerned that your review is the first step in what seems to be a political full court press to do so.

Thank you for considering our comments, attached.

Daryl DeJoy
Executive Director
Wildlife Alliance of Maine

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Zelenak, Jim](#)
To: activist@midmaine.com
Cc: [Laury Zicari](#); [Mark McCollough](#)
Subject: Re: Comments for review ie Canada Lynx
Date: Tuesday, February 03, 2015 3:35:45 PM

Thanks again, Daryl.

I will add these to the other comments we received, and I will consider these the official comments of the Wildlife Alliance of Maine.

Jim

On Sat, Jan 31, 2015 at 10:01 AM, <activist@midmaine.com> wrote:

Hi Jim,

Please consider this our official comments. I cleaned up the original a bit.

Daryl DeJoy
Executive Director
Wildlife alliance of Maine

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Erin Simons-Legaard](mailto:erin.simons@maine.edu)
To: [Robert Wagner](mailto:robert.wagner@maine.edu)
Cc: [McCollough Mark](mailto:mark.mccollough@maine.edu); [Laury Zicari](mailto:laury.zicari@maine.edu)
Subject: Re: invite to talk to USFWS about budworm
Date: Thursday, February 05, 2015 10:09:44 AM

March 19th is fine with me.

Erin Simons-Legaard
Research Assistant Professor
School of Forest Resources
5755 Nutting Hall
University of Maine
Orono, ME 04469-5755
erin.simons@maine.edu

On Thu, Feb 5, 2015 at 9:41 AM, Robert Wagner <robert.wagner@maine.edu> wrote:
Mark:

Thanks for the invitation. I am happy to meet as well.

Open dates for me are: Feb. 17 (PM), 23 (PM), and 19 (AM).

Bob

Robert G. Wagner
Henry W. Saunders Distinguished Professor in Forestry
Director, Center for Research on Sustainable Forests (CRSF) and
Cooperative Forestry Research Unit (CFRU)

5755 Nutting Hall
University of Maine
Orono, ME 04469-5755

Phone: [207-581-2903](tel:207-581-2903)
Fax: [207-581-9358](tel:207-581-9358)
Email: robert.wagner@maine.edu
Web: <http://www.forest.umaine.edu/faculty-staff/directory/robert-g-wagner/>

On Feb 5, 2015, at 9:23 AM, Erin Simons-Legaard <erin.simons@maine.edu> wrote:

Hi Mark and Laury,

Happy to share our budworm research. Any of those days would work for me but Feb 17 and 23.

Erin

Erin Simons-Legaard
Research Assistant Professor
School of Forest Resources
5755 Nutting Hall
University of Maine
Orono, ME 04469-5755
erin.simons@maine.edu

On Tue, Feb 3, 2015 at 3:11 PM, McCollough, Mark
<mark_mccollough@fws.gov> wrote:

Bob and Erin:

Much is happening with planning for the next budworm outbreak. Laury recently attended a meeting of the wildlife committee that is advising the plan concerning budworm response in Maine.

The USFWS is soon to embark on developing a recovery plan for the Canada lynx and we will announce our listing decision for the northern long-eared bat in April. Both species could be about to We have concerns about how budworm may affect forest practices for both of these species. For the lynx, the response will likely be significantly different than in the 1970s and 1980s because of the FPA. However, we are interested in your thoughts on what these differences may be. We have heard about the risk maps that Casey and Erin have developed and are curious about these as well.

Laury would like to invite you to our office to give us a briefing on the budworm, anticipated response, and opportunities for us to provide input into planning. We believe we could learn a lot that could help us with recovery planning for the lynx and the long-eared bat.

Some dates that we are available: Feb. 17 (PM), 23 (PM), 24; March 9 (PM), 17 (AM), and 19. Would you be willing to meet with us?

Thanks, Mark and Laury

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone [207 866-3344](tel:207-866-3344) x115
Cell Phone: [207 944-5709](tel:207-944-5709)
mark_mccollough@fws.gov

From: [Erin Simons-Legaard](#)
To: [McCollough, Mark](#)
Cc: [Robert Wagner](#); [Laury Zicari](#)
Subject: Re: March 19 10:00 AM spruce budworm discussion with USFWS
Date: Thursday, February 05, 2015 11:54:46 AM

Mark et al,

10:00 is OK with me if it's OK with Bob.

Erin

Erin Simons-Legaard
Research Assistant Professor
School of Forest Resources
5755 Nutting Hall
University of Maine
Orono, ME 04469-5755
erin.simons@maine.edu

On Thu, Feb 5, 2015 at 11:19 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:
Erin and Bob: Thank you for agreeing to meet with us about spruce budworm. Would March 19 at 10:00 at our office (17 Godfrey Drive in Orono Industrial Park) work for you?

We've read the budworm plan but are interested to know predictions in the severity and sensitivity of the ME forest to budworm. We are also interested in your perspectives about how silviculture may change in response to budworm.

As you may suspect, our interest is in how the budworm response will affect wildlife, especially listed animals like lynx and northern long-eared bat. Concerning the lynx, have there been projections on severity and extent of budworm damage on the Gaspé or northern New Brunswick where spruce-fir may be more contiguous? Effects and response there would affect lynx in Maine.

No need to do a lot of preparation. You each likely have presentations you have already prepared. We'd like to keep the discussion informal. We have a large flat-screen TV that you could hook computers up to or we could use a projector to project on the wall.

We will invite all the USFWS staff here to attend. If you think others would benefit, we would welcome having them join us.

Thanks, Mark McCollough and Laury Zicari

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473

Phone [207 866-3344 x115](tel:207-866-3344)
Cell Phone: [207 944-5709](tel:207-944-5709)
mark_mccollough@fws.gov

From: [Miller, Martin](#)
To: [Zicari, Laury](#)
Subject: Re: Extraordinary expenses - spatially explicit lynx population viability to support recovery
Date: Friday, February 06, 2015 11:00:48 AM

I would start selling the idea to Andrew now. Identifying benefits beyond Maine would help. The LCCs are interested in long-term habitat analysis (especially to understand climate change effects) - so, even though this is Maine-focused, perhaps it could serve as a model for similar analyses needed elsewhere in the LCC.

On Fri, Feb 6, 2015 at 8:58 AM, Zicari, Laury <laury_zicari@fws.gov> wrote:

Thanks for the note, Marty. It is odd that at the trapper meeting this week, Jen again insinuated that their tracking studies would give pop estimates (they will not) but at the actual research discussion meeting in December, her supervisor and Wally Jakubas both agreed with Mark that tracking studies give you distribution, not population.

I agree that the LCC would be a good source of funds -- it is a landscape scale thing, isn't it and it could be extended to the NH and VT range too. What does one do, send a note to Andrew Milliken or do we await the annual request for proposals if any?

thanks again

On Thu, Feb 5, 2015 at 5:25 PM, Miller, Martin <martin_miller@fws.gov> wrote:

Sounds like a solid proposal. Do you think MDIFW would still agree that this is the highest priority? Or do they see the surveys they are planning as a substitute for this?

Coming up with a population estimate for this instant in time (assuming it is a good estimate) could help explain why trappers are catching as many lynx as they are, but it is not very helpful to assessing status. We won't have an older estimate using the same methodology to compare it to, so we can't come up with a past trend. And looking to the future, without a habitat projection we can't project a population estimate. Seems like we need to try to get on the same page with MDIFW on the merits of this.

I can say it's highly unlikely we could fund this out of ES. LCC is worth a try. I'm not sure what other options might be worth considering.

On Wed, Feb 4, 2015 at 9:31 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:

Marty and Laury: I'll add a few more thoughts for justifying this research. The idea for this research goes back about 5 years ago when our Maine lynx team (MDIFW, John Organ, MEFO, UMaine, Coop Unit) last met to discuss the status of lynx research, listing, and next steps. At that time, we collectively identified a habitat-based population viability analysis as our highest research need. But, we needed to have Erin Simons complete her new lynx model and assemble the satellite habitat data for all of northern Maine. This has been done, and Erin is on contract from MEFO to extend the habitat model analysis to the entire critical habitat area.

Laury did not mention, but in addition to the trappers and MDIFW we have been hearing from Maine Forest Products Council and landowners, "what do we need to do [concerning habitat] to recover the lynx?" They too want a recovery plan and want to do

what is needed in Maine to delist the lynx. The Forest Products Council submitted a lengthy letter to the Service this week concerning the 5-year review. They are picking up the concept that lynx are seen often so they should be delisted.

Research of this type would give us confidence on how much habitat (and strategically where) needs to be in some sort of long-term management agreements to assure a viable population of lynx persists in Maine. The research would further enable us to evaluate potential threats - climate change, budworm, the Forest Practice Act - and guide recovery. Our court-mandated recovery plan is due January 2018. I think if we start this research in the fall of 2015, we could have work products available (but perhaps not the final product if a Ph.D. project) to inform the recovery plan.

Let me know if you have further questions or any other way I could help.

thanks, Mark

On Wed, Feb 4, 2015 at 9:15 AM, Zicari, Laury <laury_zicari@fws.gov> wrote:

Hi Marty. What do we do about a need like this?

Mark and I attended the Maine Trappers Association meeting on Sunday with Maine IFW staff and a great deal of the almost three hour conversation was about how folks in the North Woods think that there are beaucoup lynx and that they should be delisted. IFW also continues to say that there are many many lynx, but is not proposing a survey protocol that would provide strong evidence of a population number, rather focusing on distribution, occurrence data based on track surveys. We are being sued over the ITP by FOA and will likely be hearing from CBD soon.

Assuming that the status review will maintain their status as threatened, how could we get this funded? You know the controversies around trapping impacts on lynx, the link to forest practices and the trend towards pre-commercial thinning...and this iconic species is likely to be impacted by climate change as forest composition changes. All these conversations would greatly benefit if we had a solid population number. The recovery outline that is the only document we have to direct recovery actions acknowledges a lack of methodologies to estimate population.

Any thoughts? I could put in for one year through "extraordinary expenses" but one year doesn't get you to project completion.

----- Forwarded message -----

From: **McCollough, Mark** <mark_mccollough@fws.gov>

Date: Tue, Feb 3, 2015 at 11:12 AM

Subject: Extraordinary expenses - spatially explicit lynx population viability to support recovery

To: Laury Zicari <laury_zicari@fws.gov>

Laury: What would you think about submitting a request for funding to conduct a population viability assessment of Canada lynx in Maine's northwoods? Assuming that we proceed beyond the status review to recovery planning, this will be THE questions as it relates to recovery in Maine.

UMaine would be uniquely positioned to conduct this research. Under our current contract, Erin will have completed a habitat assessment for all of northern Maine by late spring. We could work with UMaine (and MDIFW) to agree on means to assess the population that could be supported by current habitat and reassess at a larger scale how habitat trends (extensive use of partial harvesting) and the coming budworm could affect habitat. On the population side, there are a number of experts on population modeling on campus who could evaluate the viability of the current and future populations, especially considering hare population cycles, forestry trends, budworm, and even climate change.

These are called spatially explicit population models because they are based on current and future habitat projections. Carlos Carroll (Wildlands Project) published a similar model for lynx and marten in Maine and the Northeast in *Conservation Biology* about a decade ago. I would want to see a robust model developed based on all the new data and analyses that have been published since.

I talked to Cyndy Loftin. The Unit would be very interested in supporting this project. There are several faculty on campus, including Erin Simons and Eric Blomburg, who would be qualified to participate and advise a student.

	Year 1	Year 2	Year 3	Year 4
Assistantship	\$25,000	\$25,000	\$25,000	\$15,000
Tuition	\$5,500	\$5,500	\$5,500	\$5,500
Health insurance	\$1,500	\$1,500	\$1,500	\$1,500
Travel	\$1,000	\$2,500	\$2,500	\$2,500
Computer support	\$2,500	\$1,000	\$1,000	\$1,000
Remote sensing	\$5,000	\$5,000	\$5,000	\$5,000
Publication costs				\$1,000
subtotal	\$40,500	\$40,500	\$40,500	\$31,500
Indirect costs (17%)	\$6,885	\$6,885	\$6,885	\$5,355
TOTAL	\$47,385	\$47,385	\$47,385	\$36,855

This would greatly inform the recovery process. This would answer THE most important questions concerning recovery. For example, how much habitat should be developed and conserved with northern Maine landowners to recover the lynx? Will the budworm help or hinder creating habitat? How will climate change affect lynx recovery?

This seems a bargain at \$50,000/year. Could we get help from the LCCs if the funds are not available in ES. How can we get Marty's support?

Thanks for your ideas and consideration of this.

Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office

U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 111
Fax 866-3351
Cell 207-949-0561

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Martin Miller, Chief, Division of Endangered Species, Northeast Region, U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035, 413-253-8615

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473

207-866-3344 x 111
Fax 866-3351
Cell 207-949-0561

--

Martin Miller, Chief, Division of Endangered Species, Northeast Region, U.S. Fish and
Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035, 413-253-8615

From: [McCullough, Mark](#)
To: [Miller, Martin](#)
Cc: [Zicari, Laury](#); [Anne Hecht](#)
Subject: Re: Extraordinary expenses - spatially explicit lynx population viability to support recovery
Date: Monday, February 09, 2015 11:12:15 AM

Thanks for considering this request Marty. I would appreciate information on how, when, etc. to present a proposal to the LCC.

The objective of MDIFW's survey, as we understand it, is to reconfirm the distribution of lynx. We attended an meeting about the survey with MDIFW prior to Christmas and there was no mention of using the survey to evaluate or estimate populations. Shawn Haskell (head of MDIFW research section) highly recommended that Jen Vashon develop a research prospectus, so all could better understand the objectives, scientific design, and outcomes expected from new lynx surveys.

I believe MDIFW would stil be supportive of this research, particularly because a spatially explicit population model would support identifying the population (or habitat needed to support a population) for recovery.

Although we do not have information on past populations or trends, the UMaine research has modeled lynx habitat in Maine going back to 1970s. We have good information on trends past-present-future on lynx habitat trends.

Mark

On Thu, Feb 5, 2015 at 5:25 PM, Miller, Martin <martin_miller@fws.gov> wrote:

Sounds like a solid proposal. Do you think MDIFW would still agree that this is the highest priority? Or do they see the surveys they are planning as as substitute for this?

Coming up with a population estimate for this instant in time (assuming it is a good estimate) could help explain why trappers are catching as many lynx as they are, but it is not very helpful to assessing status. We won't have an older estimate using the same methodology to compare it to, so we can't come up with a past trend. And looking to the future, without a habitat projection we can't project a population estimate. Seems like we need to try to get on the same page with MDIFW on the merits of this.

I can say it's highly unlikely we could fund this out of ES. LCC is worth a try. I'm not sure what other options might be worth considering.

On Wed, Feb 4, 2015 at 9:31 AM, McCullough, Mark <mark_mccollough@fws.gov> wrote:

Marty and Laury: I'll add a few more thoughts for justifying this research. The idea for this research goes back about 5 years ago when our Maine lynx team (MDIFW, John Organ, MEFO, UMaine, Coop Unit) last met to discuss the status of lynx research, listing, and next steps. At that time, we collectively identified a habitat-based population viability analysis as our highest research need. But, we needed to have Erin Simons complete her new lynx model and assemble the satellite habitat data for all of northern Maine. This has been done, and Erin is on contract from MEFO to extend the habitat model analysis to the entire critical habitat area.

Laury did not mention, but in addition to the trappers and MDIFW we have been hearing from Maine Forest Products Council and landowners, "what do we need to do [concerning habitat] to recover the lynx?" They too want a recovery plan and want to do what is needed in Maine to delist the lynx. The Forest Products Council submitted a lengthy letter to the Service this week concerning the 5-year review. They are picking up the concept that lynx are seen often so they should be delisted.

Research of this type would give us confidence on how much habitat (and strategically where) needs to be in some sort of long-term management agreements to assure a viable population of lynx persists in Maine. The research would further enable us to evaluate potential threats - climate change, budworm, the Forest Practice Act - and guide recovery. Our court-mandated recovery plan is due January 2018. I think if we start this research in the fall of 2015, we could have work products available (but perhaps not the final product if a Ph.D. project) to inform the recovery plan.

Let me know if you have further questions or any other way I could help.

thanks, Mark

On Wed, Feb 4, 2015 at 9:15 AM, Zicari, Laury <laury_zicari@fws.gov> wrote:

Hi Marty. What do we do about a need like this?

Mark and I attended the Maine Trappers Association meeting on Sunday with Maine IFW staff and a great deal of the almost three hour conversation was about how folks in the North Woods think that there are beaucoup lynx and that they should be delisted. IFW also continues to say that there are many many lynx, but is not proposing a survey protocol that would provide strong evidence of a population number, rather focusing on distribution, occurrence data based on track surveys. We are being sued over the ITP by FOA and will likely be hearing from CBD soon.

Assuming that the status review will maintain their status as threatened, how could we get this funded? You know the controversies around trapping impacts on lynx, the link to forest practices and the trend towards pre-commercial thinning...and this iconic species is likely to be impacted by climate change as forest composition changes. All these conversations would greatly benefit if we had a solid population number. The recovery outline that is the only document we have to direct recovery actions acknowledges a lack of methodologies to estimate population.

Any thoughts? I could put in for one year through "extraordinary expenses" but one year doesn't get you to project completion.

----- Forwarded message -----

From: **McCollough, Mark** <mark_mccollough@fws.gov>

Date: Tue, Feb 3, 2015 at 11:12 AM

Subject: Extraordinary expenses - spatially explicit lynx population viability to support recovery

To: Laury Zicari <laury_zicari@fws.gov>

Laury: What would you think about submitting a request for funding to conduct a

population viability assessment of Canada lynx in Maine's northwoods? Assuming that we proceed beyond the status review to recovery planning, this will be THE questions as it relates to recovery in Maine.

UMaine would be uniquely positioned to conduct this research. Under our current contract, Erin will have completed a habitat assessment for all of northern Maine by late spring. We could work with UMaine (and MDIFW) to agree on means to assess the population that could be supported by current habitat and reassess at a larger scale how habitat trends (extensive use of partial harvesting) and the coming budworm could affect habitat. On the population side, there are a number of experts on population modeling on campus who could evaluate the viability of the current and future populations, especially considering hare population cycles, forestry trends, budworm, and even climate change.

These are called spatially explicit population models because they are based on current and future habitat projections. Carlos Carroll (Wildlands Project) published a similar model for lynx and marten in Maine and the Northeast in Conservation Biology about a decade ago. I would want to see a robust model developed based on all the new data and analyses that have been published since.

I talked to Cyndy Loftin. The Unit would be very interested in supporting this project. There are several faculty on campus, including Erin Simons and Eric Blomberg, who would be qualified to participate and advise a student.

	Year 1	Year 2	Year 3	Year 4
Assistantship	\$25,000	\$25,000	\$25,000	\$15,000
Tuition	\$5,500	\$5,500	\$5,500	\$5,500
Health insurance	\$1,500	\$1,500	\$1,500	\$1,500
Travel	\$1,000	\$2,500	\$2,500	\$2,500
Computer support	\$2,500	\$1,000	\$1,000	\$1,000
Remote sensing	\$5,000	\$5,000	\$5,000	\$5,000
Publication costs				\$1,000
subtotal	\$40,500	\$40,500	\$40,500	\$31,500
Indirect costs (17%)	\$6,885	\$6,885	\$6,885	\$5,355
TOTAL	\$47,385	\$47,385	\$47,385	\$36,855

This would greatly inform the recovery process. This would answer THE most important questions concerning recovery. For example, how much habitat should be developed and conserved with northern Maine landowners to recover the lynx? Will the budworm help or hinder creating habitat? How will climate change affect lynx recovery?

This seems a bargain at \$50,000/year. Could we get help from the LCCs if the funds are not available in ES. How can we get Marty's support?

Thanks for your ideas and consideration of this.

Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 111
Fax 866-3351
Cell 207-949-0561

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Martin Miller, Chief, Division of Endangered Species, Northeast Region, U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035, 413-253-8615

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service

17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [McCollough, Mark](#)
To: [Houston, Robert](#); [Jim Zelenak](#)
Subject: Re: lynx question
Date: Tuesday, March 10, 2015 1:24:45 PM

Bob: Yes, you uncovered an interesting feature of the Service's lynx web page. I immediately clicked on the Critical Habitat link on the left side of the page, which took me to the 2013 proposed critical habitat rule.

Jim: It seems that our 2014 final CH rule and associated information info should be placed on the lynx critical habitat page?

Thanks, Mark

On Tue, Mar 10, 2015 at 1:11 PM, Houston, Robert <robert_houston@fws.gov> wrote:

Hi Mark,

What's the difference in the website in your email vs this

one: <http://www.fws.gov/mountain-prairie/species/mammals/lynx/index.htm> ??

Although I'm not totally familiar with the sites, it looks like the site in your email has older data?? The shapefiles are available from both sites, but I would think we should point Jay to the most recent data (2014). The more I look at it, the more I think there is something mixed up with the Lynx website.

- Bob

Bob Houston, Biologist/GIS Specialist
USFWS, Gulf of Maine Coastal Program
4R Fundy Rd., Falmouth, ME 04105
Phone: (207) 781-8364 ext. 11, Cell: (207) 939-3003
Email: robert_houston@fws.gov
Website: <http://www.fws.gov/gomcp>

On Tue, Mar 10, 2015 at 11:44 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:

Jay: Attached are the Section 7 lynx range map that we have been using since 2009 and the most recent CH map.

Bob Houston has digital files for both if that would be helpful. You can download the critical habitat shapefiles from: <http://www.fws.gov/mountain-prairie/species/mammals/lynx/criticalhabitat.htm>

I don't have a critical habitat map overlain on the Section 7 range map (with township lines, roads, etc.), but Bob could likely put one together. Seems like this would be useful for you and other federal agencies.

Please let us know if you have any questions.

Thanks, Mark

On Tue, Mar 10, 2015 at 11:12 AM, Clement, Jay L NAE

<Jay.L.Clement@usace.army.mil> wrote:

Mark/Wende:

Maybe you can help out Rod and me with a link to a good lynx CH & Range map? Leeann had one that had no spatial reference and the CH portal on line only shows CH, not range. Seems to me I've seen one overlain on a good Maine map or aerial where you could actually tell where things were. Or was I only wishing for that? We didn't see anything obvious on your office web site.

Jay Clement
Senior Project Manager
US Army Corps of Engineers
Maine Project Office
(207)623-8367

In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office

U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [McCollough, Mark](#)
To: [Zelenak, Jim](#)
Subject: Re: 5-year review and new info from Maine
Date: Tuesday, March 17, 2015 11:04:13 AM

Thanks Jim. No, I haven't sent Sheryn Olson's thesis around to lynx folks. You are welcome to. I'm not sure I have a complete circulation list.

Mark

On Tue, Mar 17, 2015 at 10:59 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

We are still scrambling to get the CH admin. record compiled here.

This training is being put on by R1, but this is what the course coordinator said re: NCTC:

"So that you can have this class on your training transcript we have listed the training with NCTC.

Do not register for the class at the NCTC website.

We will circulate a sign-in sheet during the training and we handle your registration for you once the class is complete. We need to handle registration in this way because of a NCTC requirement for local training courses. Next time you do a local class we will likely have the capability for you to sign up yourselves."

No 5-year comments from MDIFW. So far from Maine, comments from - ME Audubon, 7 Islands Land Co., ME Forest Products Council, and Wildlife Alliance ME.

Thanks for Sheryn's thesis; hope to make time to read it soon. I will send around to others who may be interested. Have you shared with other lynx folks yet?

On Tue, Mar 17, 2015 at 8:28 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:

Jim: The FOIA / litigation training sounds appropos for here as well. We are a month overdue assembling all the materials for the CBD FOIA, and our atty is working on the Friends of Animals trapping law suit. We will have a ginormous administrative record to assemble. Is the training something that NCTC offers?

Glad to hear that you are working on the 5-year review. I have had a few questions from the State about progress. Did Maine Inland Fisheries and Wildlife send you comments?

We just had a new graduate student, Sheryn Olson, complete her master's degree. A pdf is attached for your files and possible use in the review.

She confirmed that hare was the most important part of the diet summer vs. winter and during periods of low and high hare populations (and other species consumed). She also evaluated hare habitat selection summer vs. winter. Feel free to share thesis with others that may be interested.

Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [Zelenak, Jim](#)
To: [Zicari, Laury](#)
Cc: [McCollough, Mark](#)
Subject: Re: Lynx SSA
Date: Friday, March 27, 2015 9:22:31 AM

Excellent, Laury - that would be most helpful! We will use the "new REV thingie", too, once we get to recovery planning (unless SSA and 5-year indicate that delisting the DPS is warranted, though that is a little hard to imagine).

I look forward to seeing the eel SSA - thanks!

Jim

On Fri, Mar 27, 2015 at 7:17 AM, Zicari, Laury <laury_zicari@fws.gov> wrote:

One of my guys, Steve Shepard just completed the SSA for the American eel, using the new REV thingie and it will be going public soon -- I can get you a copy as an example. It was a multi region, multi field station thing like the lynx will be, heavy on science of course. AND we are completing the first recovery plan using the new approach here with the Atlantic salmon -- within a few weeks I can send you that as an example, too. Supposedly it is a hybrid, but it has a lot of the stuff that used to be in the plan on a website. It has been a struggle to understand what goes in the plan, what no longer does and WE are working with another agency, NMFS as the species is jointly listed.

fun

On Fri, Mar 27, 2015 at 9:13 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Thanks Mark. I'll add Houlton Band and Micmacs, and I'll see if I can track anyone down in NY regarding Mohawk Tribe.

I rushed that draft project plan out to R6 Recovery Coordinator yesterday in response to Paul's request - it hasn't been through thorough review here yet and, as you may have noticed, some sections are still incomplete.

Already the date for the 5-year review in Jodi's letter (June 2015) is getting pushed back due to belated recognition by folks here and at RO that we will first need to implement the newish SSA process. Should be interesting.

I welcome any pother thoughts you have on the draft project plan which, due to the paucity of good existing templates, is kind of a stab in the dark. On top of that, I'm completely new to SSA, 5-year review, and recovery planning processes.

Also still working on finalizing the AR for the CH lawsuits.

Hope all is well there and the springtime is finally finding you-all.

Jim

On Fri, Mar 27, 2015 at 6:16 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:

Jim - Paul Phifer shared a copy of the draft project plan to complete a lynx species status assessment. He received a copy in advance of an important meeting we have with MDIFW on Monday.

I read through quickly. Please add the Houlton Band of Maliseets and Aroostook Band of Micmac Indians to the list of federally-recognized,affected tribes. I am not sure if the Mohawk tribe in northern NY should be listed as well.

I look forward to working with you on this. I will let you know what we hear from MDIFW on this subject on Monday.

Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 111
Fax 866-3351
Cell 207-949-0561

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Zelenak, Jim](#)
To: [Jodi Bush](#)
Cc: [Ryan Moehring](#); [Seth Willey](#); [Mark McCollough](#); [John Bryan](#); [Brent Esmoil](#)
Subject: Fwd: Lynx
Date: Friday, April 03, 2015 3:16:14 PM
Attachments: [image002.png](#)
[image001.png](#)

All:

At bottom, we have a request for an update on the lynx review from an AP reporter in Maine that was sent to Mark and me. I've drafted the following response but would like your review and blessing before I send it. I understand Ryan is out until Monday, but I think it can probably wait until then anyway.

Let me know if you have any concerns or other thoughts.

My draft response:

David,

After the news release indicating that the 5-year review for lynx would be completed by June 2015 was published, the Service determined that it would be necessary first to apply its relatively new SSA (Species Status Assessment) process to the lynx. This structured threats assessment will involve coordination across 5 Service regions (1, 2, 3, 5, and 6) and with at least 15 states and perhaps 23 Tribal organizations within the range of the lynx DPS, and will likely involve a number of regional expert elicitation meetings. The resulting SSA report will then be the basis for a streamlined 5-year review and a recovery plan, unless the SSA and 5-year review indicate that the DPS no longer warrants listing under the Endangered Species Act, in which case a recovery plan would not be necessary.

Some aspects of the time line for this process are still up in the air, but in general we hope to have the SSA report completed this fall and to publish the 5-year review by Dec. 2015. If the SSA and 5-year review indicate that the DPS continues to warrant listing under the Act, we will begin work on a recovery plan, publishing a draft plan by Dec. 2016, and a final plan (after public comment and peer-review) by Dec. 2017. We have a court-ordered deadline of Jan. 15, 2018 for finalizing a recovery plan unless we make a determination, based on the SSA report and 5-year review, that the lynx DPS no longer warrants listing under the Act.

Hope this helps. Let me know if you have questions.

Jim

On Fri, Apr 3, 2015 at 12:39 PM, Sharp, David <DSharp@ap.org> wrote:

Gents:

I'm checking in on the lynx assessment. I'd like to flag any milestones in my calendar. I recall that it's going to be completed this summer. Is it on schedule? Anything else I should be thinking about?

Thanks,

David

AP



ASSOCIATED PRESS

David Sharp

75 Market Street, Suite 402

Correspondent

Portland, ME 04101

Portland, Maine

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: [David_Sharp_AP](#)

F 207.774.6625

The information contained in this communication is intended for the use of the designated recipients named above. If the reader of this communication is not the intended recipient, you are hereby notified that you have received this communication in error, and that any review, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify The Associated Press immediately by telephone at +1-212-621-1898 and delete this email. Thank you.

[IP_US_DISC]

msk dccc60c6d2c3a6438f0cf467d9a4938

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [McCollough, Mark](#)
To: [Zelenak, Jim](#)
Subject: Re: Lynx
Date: Monday, April 06, 2015 9:12:54 AM
Attachments: [image001.png](#)
[image002.png](#)

Jim:

I am fine with what you wrote for a response to AP. The SSA process lengthens the timeline for a 5-year review, but I assume that it would shorten the time needed to write a recovery plan.

Last week we met with MDIFW with our ARD Paul Phifer to discuss a number of ESA issues. MDIFW brought up lynx delisting. Paul described the process that we will use for SSA, 5-year review, and recovery planning. MDIFW said they want to be involved with all the steps. They have also been talking to the Maine Forest Products Council about lynx delisting. The Council also wants to be involved with the status review. MDIFW says the Council can show us a map of how much lynx habitat we currently have and that there will be no issue creating more habitat in the future. As you know, this conclusion about Maine's lynx habitat is in conflict with UMaine research lynx habitat modeling, trajectory of lynx habitat, and conclusions about how current forest practices affect lynx.

As you may recall, the Maine Forest Products Council provided similar maps in 2008-09 concerning lynx habitat in Maine, with no explanation of where the data came from, how projections of future habitat were made, etc. It sounds like they would provide similar maps again.

Our field office is contracting with UMaine, Dr. Erin Simons to complete the lynx habitat model for all of northern Maine. We will share that work product with you as soon as it is available in early summer.

Mark

On Fri, Apr 3, 2015 at 3:16 PM, Zelenak, Jim <jim.zelenak@fws.gov> wrote:

All:

At bottom, we have a request for an update on the lynx review from an AP reporter in Maine that was sent to Mark and me. I've drafted the following response but would like your review and blessing before I send it. I understand Ryan is out until Monday, but I think it can probably wait until then anyway.

Let me know if you have any concerns or other thoughts.

My draft response:

David,

After the news release indicating that the 5-year review for lynx would be completed by June 2015 was published, the Service determined that it would be necessary first to apply its relatively new SSA (Species Status Assessment) process to the lynx. This structured threats assessment will involve coordination across 5 Service regions (1, 2, 3, 5, and 6) and with at least 15 states and perhaps 23 Tribal organizations within the range of the lynx DPS, and

will likely involve a number of regional expert elicitation meetings. The resulting SSA report will then be the basis for a streamlined 5-year review and a recovery plan, unless the SSA and 5-year review indicate that the DPS no longer warrants listing under the Endangered Species Act, in which case a recovery plan would not be necessary.

Some aspects of the time line for this process are still up in the air, but in general we hope to have the SSA report completed this fall and to publish the 5-year review by Dec. 2015. If the SSA and 5-year review indicate that the DPS continues to warrant listing under the Act, we will begin work on a recovery plan, publishing a draft plan by Dec. 2016, and a final plan (after public comment and peer-review) by Dec. 2017. We have a court-ordered deadline of Jan. 15, 2018 for finalizing a recovery plan unless we make a determination, based on the SSA report and 5-year review, that the lynx DPS no longer warrants listing under the Act.

Hope this helps. Let me know if you have questions.

Jim

On Fri, Apr 3, 2015 at 12:39 PM, Sharp, David <DSharp@ap.org> wrote:

Gents:

I'm checking in on the lynx assessment. I'd like to flag any milestones in my calendar. I recall that it's going to be completed this summer. Is it on schedule? Anything else I should be thinking about?

Thanks,

David



ASSOCIATED PRESS

David Sharp

75 Market Street, Suite 402

Correspondent

Portland, ME 04101

Portland, Maine

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: [David_Sharp_AP](https://twitter.com/David_Sharp_AP)

F 207.774.6625

The information contained in this communication is intended for the use of the designated recipients named above. If the reader of this communication is not the intended recipient, you are hereby notified that you have received this communication in error, and that any review, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify The Associated Press immediately by telephone at +1-212-621-1898 and delete this email. Thank you.

[IP_US_DISC]

msk dccc60c6d2c3a6438f0cf467d9a4938

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

Label: "Meagan Racey Lynx SSA Emails"

Created by:meagan_racey@fws.gov

Total Messages in label:193 (37 conversations)

Created: 01-03-2018 at 07:44 AM

Conversation Contents

Re: Lynx

Attachments:

/36. Re: Lynx/1.1 image001.png
/36. Re: Lynx/1.2 image002.png
/36. Re: Lynx/2.1 image002.png
/36. Re: Lynx/2.2 image001.png
/36. Re: Lynx/3.1 image001.png
/36. Re: Lynx/3.2 image002.png

"Zelenak, Jim" <jim_zelenak@fws.gov>

From: "Zelenak, Jim" <jim_zelenak@fws.gov>
Sent: Tue Apr 07 2015 07:25:57 GMT-0600 (MDT)
To: "Sharp, David" <DSharp@ap.org>
CC: "mark_mccollough@fws.gov" <mark_mccollough@fws.gov>, Meagan Racey <meagan_racey@fws.gov>, Ryan Moehring <ryan_moehring@fws.gov>, Seth Willey <seth_willey@fws.gov>, Jodi Bush <jodi_bush@fws.gov>, Brent Esmoil <brent_esmoil@fws.gov>, Laury Zicari <Laury_Zicari@fws.gov>
Subject: Re: Lynx
Attachments: image001.png image002.png

David,

After the news release indicating that the 5-year review for lynx would be completed by June 2015 was published, the Service determined that it would be necessary first to apply its relatively new SSA (Species Status Assessment) process to the lynx. This structured threats assessment will involve coordination across 5 Service regions (1, 2, 3, 5, and 6) and with several other federal agencies, at least 15 states, and perhaps 23 Tribal organizations within the range of the lynx DPS, and will likely involve a number of regional expert elicitation meetings involving lynx researchers most familiar with each of the subpopulations within the DPS. The resulting SSA report will then be the basis for a streamlined 5-year review and a recovery plan, unless the SSA and 5-year review indicate that the DPS no longer warrants listing under the Endangered Species Act, in which case a recovery plan would not be necessary.

Some aspects of the time line for this process are still up in the air, but in general we hope to have the SSA report completed this fall and to publish the 5-year review by Dec. 2015. If the SSA and 5-year review indicate that the DPS continues to warrant listing under the Act, we will begin work on a recovery plan, publishing a draft plan by Dec. 2016, and a final plan (after public comment and peer-review) by Dec. 2017. We have a court-ordered deadline of Jan. 15, 2018 for finalizing a recovery plan unless we make a determination, based on the SSA report and 5-year review, that the lynx DPS no longer warrants listing under the Act.

Thus far, in response to our January 2015 request for information pertinent to the 5-year review of the status of the DPS, we have received some useful information from a number of state agencies, industry, conservation groups and the general public. We will evaluate this information and incorporate it as appropriate in our decision making process.

Hope this helps. Let me know if you have questions.

Jim

On Fri, Apr 3, 2015 at 12:39 PM, Sharp, David <DSharp@ap.org> wrote:

Gents:

I'm checking in on the lynx assessment. I'd like to flag any milestones in my calendar. I recall that it's going to be completed this summer. Is it on schedule? Anything else I should be thinking about?

Thanks,

David

cid:
90

Descript
C:\User:

David Sharp

75 Market Street, Suite 402

Correspondent

Portland, ME 04101

Portland, Maine

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: [David_Sharp_AP](#)

F 207.774.6625

The information contained in this communication is intended for the use of the designated recipients named above. If the reader of this communication is not the intended recipient, you are hereby notified that you have received this communication in error, and that any review, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify The Associated Press immediately by telephone at +1-212-621-1898 and delete this email. Thank you.

[IP_US_DISC]

msk dccc60c6d2c3a6438f0cf467d9a4938

--
Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601

(406) 449-5225 ext. 220
jim_zelenak@fws.gov

"Zelenak, Jim" <jim_zelenak@fws.gov>

From: "Zelenak, Jim" <jim_zelenak@fws.gov>
Sent: Wed Apr 08 2015 08:52:32 GMT-0600 (MDT)
To: Mark McCollough <mark_mccollough@fws.gov>, Laury Zicari <Laury_Zicari@fws.gov>, Meagan Racey <meagan_racey@fws.gov>
Subject: Fwd: Lynx
Attachments: image002.png image001.png

You all saw my original response to David. He had a follow-up question asking why the SSA process. Below is my response.

If he calls/contacts me regarding the status of things in ME, lawsuit or otherwise, I will most likely point him back to you-all.

Let me know if anything else is needed from here.

Jim

----- Forwarded message -----
From: **Zelenak, Jim** <jim_zelenak@fws.gov>
Date: Tue, Apr 7, 2015 at 8:04 AM
Subject: Re: Lynx
To: "Sharp, David" <DSharp@ap.org>

Well, that's a good question, David. This will be my first go-round with this process, so I'm still learning, but here is a quote from a presentation our HQ (D.C.) office put together to try to explain it to other folks in USFWS.

"The Species Status Assessment Framework (SSA) is foundational to all our Endangered Species program work; it integrates our biological processes into one analysis that has relevance for all our decisions and actions (e.g. listing, section 7 & 10, recovery)."

I think the idea is to bring increased consistency to the process and to generate an analysis that serves multiple purposes and can streamline our federal register notices for listings, 5-year reviews, recovery plans, etc.

Jim

On Tue, Apr 7, 2015 at 7:46 AM, Sharp, David <DSharp@ap.org> wrote:

Why the more detailed SSA process?

cid:
90
4B

Descripti
C:\Users
Internet

David Sharp
Correspondent
Portland, Maine

75 Market Street, Suite 402
Portland, ME 04101

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: David_Sharp_AP

F 207.774.6625

From: Zelenak, Jim [mailto:jim_zelenak@fws.gov]

Sent: Tuesday, April 07, 2015 9:26 AM

To: Sharp, David

Cc: mark_mccollough@fws.gov; Meagan Racey; Ryan Moehring; Seth Willey; Jodi Bush; Brent Esmoil; Laury Zicari

Subject: Re: Lynx

David,

After the news release indicating that the 5-year review for lynx would be completed by June 2015 was published, the Service determined that it would be necessary first to apply its relatively new SSA (Species Status Assessment) process to the lynx. This structured threats assessment will involve coordination across 5 Service regions (1, 2, 3, 5, and 6) and with several other federal agencies, at least 15 states, and perhaps 23 Tribal organizations within the range of the lynx DPS, and will likely involve a number of regional expert elicitation meetings involving lynx researchers most familiar with each of the subpopulations within the DPS. The resulting SSA report will then be the basis for a streamlined 5-year review and a recovery plan, unless the SSA and 5-year review indicate that the DPS no longer warrants listing under the Endangered Species Act, in which case a recovery plan would not be necessary.

Some aspects of the time line for this process are still up in the air, but in general we hope to have the SSA report completed this fall and to publish the 5-year review by Dec. 2015. If the SSA and 5-year review indicate that the DPS continues to warrant listing under the Act, we will begin work on a recovery plan, publishing a draft plan by Dec. 2016, and a final plan (after public comment and peer-review) by Dec. 2017. We have a court-ordered deadline of Jan. 15, 2018 for finalizing a recovery plan unless we make a determination, based on the SSA report and 5-year review, that the lynx DPS no longer warrants listing under the Act.

Thus far, in response to our January 2015 request for information pertinent to the 5-year review of the status of the DPS, we have received some useful information from a number of state agencies, industry, conservation groups and the general public. We will evaluate this information and incorporate it as appropriate in our decision making process.

Hope this helps. Let me know if you have questions.

Jim

On Fri, Apr 3, 2015 at 12:39 PM, Sharp, David <DSharp@ap.org> wrote:

Gents:

I'm checking in on the lynx assessment. I'd like to flag any milestones in my calendar. I recall that it's going to be completed this summer. Is it on schedule? Anything else I should be

thinking about?

Thanks,

David

cid:
90

Descript
C:\User

David Sharp

75 Market Street, Suite 402

Correspondent

Portland, ME 04101

Portland, Maine

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: [David_Sharp_AP](#)

F 207.774.6625

The information contained in this communication is intended for the use of the designated recipients named above. If the reader of this communication is not the intended recipient, you are hereby notified that you have received this communication in error, and that any review, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify The Associated Press immediately by telephone at +1-212-621-1898 and delete this email. Thank you.

[IP_US_DISC]

msk dccc60c6d2c3a6438f0cf467d9a4938

--

Jim Zelenak, Biologist

U.S. Fish and Wildlife Service

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225 ext. 220

jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

"Racey, Meagan" <meagan_racey@fws.gov>

From: "Racey, Meagan" <meagan_racey@fws.gov>
Sent: Wed Apr 08 2015 09:48:04 GMT-0600 (MDT)
To: "Zelenak, Jim" <jim_zelenak@fws.gov>
Subject: Re: Lynx
Attachments: image001.png image002.png

Thanks, Jim!

On Wed, Apr 8, 2015 at 10:52 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

You all saw my original response to David. He had a follow-up question asking why the SSA process. Below is my response.

If he calls/contacts me regarding the status of things in ME, lawsuit or otherwise, I will most likely point him back to you-all.

Let me know if anything else is needed from here.

Jim

----- Forwarded message -----

From: **Zelenak, Jim** <jim_zelenak@fws.gov>
Date: Tue, Apr 7, 2015 at 8:04 AM
Subject: Re: Lynx

To: "Sharp, David" <DSharp@ap.org>

Well, that's a good question, David. This will be my first go-round with this process, so I'm still learning, but here is a quote from a presentation our HQ (D.C.) office put together to try to explain it to other folks in USFWS.

"The Species Status Assessment Framework (SSA) is foundational to all our Endangered Species program work; it integrates our biological processes into one analysis that has relevance for all our decisions and actions (e.g. listing, section 7 & 10, recovery)."

I think the idea is to bring increased consistency to the process and to generate an analysis that serves multiple purposes and can streamline our federal register notices for listings, 5-year reviews, recovery plans, etc.

Jim

On Tue, Apr 7, 2015 at 7:46 AM, Sharp, David <DSharp@ap.org> wrote:

Why the more detailed SSA process?

cid:
90
AP

Descripti
C:\Users
Internet

David Sharp

75 Market Street, Suite 402

Correspondent

Portland, ME 04101

Portland, Maine

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: [David_Sharp_AP](#)

F 207.774.6625

From: Zelenak, Jim [mailto:jim_zelenak@fws.gov]

Sent: Tuesday, April 07, 2015 9:26 AM

To: Sharp, David

Cc: mark_mccollough@fws.gov; Meagan Racey; Ryan Moehring; Seth Willey; Jodi Bush; Brent Esmoil; Laury Zicari

Subject: Re: Lynx

David,

After the news release indicating that the 5-year review for lynx would be completed by June 2015 was published, the Service determined that it would be necessary first to apply its relatively new SSA (Species Status Assessment) process to the lynx. This structured threats assessment will involve coordination across 5 Service regions (1, 2, 3, 5, and 6) and with several other federal agencies, at least 15 states, and perhaps 23 Tribal organizations within the range of the lynx DPS, and will likely involve a number of regional expert elicitation meetings involving lynx researchers most familiar with each of the subpopulations within the DPS. The resulting SSA report will then be the basis for a streamlined 5-year review and a recovery plan, unless the SSA and 5-year review indicate that the DPS no longer warrants listing under the Endangered Species Act, in which case a recovery plan would not be necessary.

Some aspects of the time line for this process are still up in the air, but in general we hope to have the SSA report completed this fall and to publish the 5-year review by Dec. 2015. If the SSA and 5-year review indicate that the DPS continues to warrant listing under the Act, we will begin work on a recovery plan, publishing a draft plan by Dec. 2016, and a final plan (after public comment and peer-review) by Dec. 2017. We have a court-ordered deadline of Jan. 15, 2018 for finalizing a recovery plan unless we make a determination, based on the SSA report and 5-year review, that the lynx DPS no longer warrants listing under the Act.

Thus far, in response to our January 2015 request for information pertinent to the 5-year review of the status of the DPS, we have received some useful information from a number of state agencies, industry, conservation groups and the general public. We will evaluate this information and incorporate it as appropriate in our decision making process.

Hope this helps. Let me know if you have questions.

Jim

On Fri, Apr 3, 2015 at 12:39 PM, Sharp, David <DSharp@ap.org> wrote:

Gents:

I'm checking in on the lynx assessment. I'd like to flag any milestones in my calendar. I recall that it's going to be completed this summer. Is it on schedule? Anything else I should be thinking about?

Thanks,

David



David Sharp

75 Market Street, Suite 402

Correspondent

Portland, ME 04101

Portland, Maine

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: [David_Sharp_AP](https://twitter.com/David_Sharp_AP)

F 207.774.6625

The information contained in this communication is intended for the use of the designated recipients named above. If the reader of this communication is not the intended recipient, you are hereby notified that you have received this communication in error, and that any review, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify The Associated Press immediately by telephone at +1-212-621-1898 and delete this email. Thank you.

[IP_US_DISC]

msk dccc60c6d2c3a6438f0cf467d9a4938

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog, Conserving the nature of the Northeast](#)

From: [Racey, Meagan](#)
To: [Martin Miller](#); [Mary Parkin](#); [Paul Phifer](#); [Spencer Simon](#); [Laury Zicari](#)
Cc: [Mark McCollough](#)
Subject: Fwd: Lynx SSA
Date: Tuesday, April 07, 2015 10:06:05 PM
Attachments: [image002.png](#)
[image001.png](#)

FYI - looks like a change in timeline

----- Forwarded message -----

From: **Zelenak, Jim** <jim_zelenak@fws.gov>
Date: Tuesday, April 7, 2015
Subject: Re: Lynx
To: "Sharp, David" <DSharp@ap.org>
Cc: "mark_mccollough@fws.gov" <mark_mccollough@fws.gov>, Meagan Racey <meagan_racey@fws.gov>, Ryan Moehring <ryan_moehring@fws.gov>, Seth Willey <seth_willey@fws.gov>, Jodi Bush <jodi_bush@fws.gov>, Brent Esmoil <brent_esmoil@fws.gov>, Laury Zicari <Laury_Zicari@fws.gov>

David,

After the news release indicating that the 5-year review for lynx would be completed by June 2015 was published, the Service determined that it would be necessary first to apply its relatively new SSA (Species Status Assessment) process to the lynx. This structured threats assessment will involve coordination across 5 Service regions (1, 2, 3, 5, and 6) and with several other federal agencies, at least 15 states, and perhaps 23 Tribal organizations within the range of the lynx DPS, and will likely involve a number of regional expert elicitation meetings involving lynx researchers most familiar with each of the subpopulations within the DPS. The resulting SSA report will then be the basis for a streamlined 5-year review and a recovery plan, unless the SSA and 5-year review indicate that the DPS no longer warrants listing under the Endangered Species Act, in which case a recovery plan would not be necessary.

Some aspects of the time line for this process are still up in the air, but in general we hope to have the SSA report completed this fall and to publish the 5-year review by Dec. 2015. If the SSA and 5-year review indicate that the DPS continues to warrant listing under the Act, we will begin work on a recovery plan, publishing a draft plan by Dec. 2016, and a final plan (after public comment and peer-review) by Dec. 2017. We have a court-ordered deadline of Jan. 15, 2018 for finalizing a recovery plan unless we make a determination, based on the SSA report and 5-year review, that the lynx DPS no longer warrants listing under the Act.

Thus far, in response to our January 2015 request for information pertinent to the 5-year review of the status of the DPS, we have received some useful information from a number of state agencies, industry, conservation groups and the general public. We will evaluate this information and incorporate it as appropriate in our decision making process.

Hope this helps. Let me know if you have questions.

Jim

On Fri, Apr 3, 2015 at 12:39 PM, Sharp, David <DSharp@ap.org> wrote:

Gents:

I'm checking in on the lynx assessment. I'd like to flag any milestones in my calendar. I recall that it's going to be completed this summer. Is it on schedule? Anything else I should be thinking about?

Thanks,

David

AP

ASSOCIATED PRESS

David Sharp

75 Market Street, Suite 402

Correspondent

Portland, ME 04101

Portland, Maine

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: [David_Sharp_AP](https://twitter.com/David_Sharp_AP)

F 207.774.6625

The information contained in this communication is intended for the use of the designated recipients named above. If the reader of this communication is not the intended recipient, you are hereby notified that you have received this communication in error, and that any review, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify The Associated Press immediately by telephone at +1-212-621-1898 and delete this email. Thank you.

[IP_US_DISC]

msk dccc60c6d2c3a6438f0cf467d9a4938

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220

jim_zelenak@fws.gov

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog, Conserving the nature of the Northeast](#)

Label: "Meagan Racey Lynx SSA Emails"

Created by:meagan_racey@fws.gov

Total Messages in label:193 (37 conversations)

Created: 01-03-2018 at 07:44 AM

Conversation Contents

AP interest in an lynx story update

"McCollough, Mark" <mark_mccollough@fws.gov>

From: "McCollough, Mark" <mark_mccollough@fws.gov>
Sent: Wed Apr 08 2015 08:16:59 GMT-0600 (MDT)
To: Laury Zicari <laury_zicari@fws.gov>, Meagan Racey <meagan_racey@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>
Subject: AP interest in an lynx story update

FYI. I just got off the phone talking with David Sharp, Maine AP, concerning lynx issues. He seems interested in story lines relating to the revised approach to the 5-year review (SSA, recovery plan, etc.) and the status of the Friends of Animals lawsuit concerning the Maine trapping ITP and possibly related suits in MT and elsewhere.

I talked to him in general terms about the suit. He was specifically interested in what new regulations MDIFW may be developing to address lethal take in killer-type traps (we don't know at this point in time). It sounds like he may follow up with calls to MDIFW (Mark Latte) and Jim Zelenak for further information.

Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

"Racey, Meagan" <meagan_racey@fws.gov>

From: "Racey, Meagan" <meagan_racey@fws.gov>
Sent: Wed Apr 08 2015 08:18:06 GMT-0600 (MDT)
To: "mark.latti" <mark.latti@maine.gov>
Subject: Fwd: AP interest in an lynx story update

FYI

----- Forwarded message -----

From: **McCollough, Mark** <mark_mccollough@fws.gov>
Date: Wed, Apr 8, 2015 at 10:16 AM
Subject: AP interest in an lynx story update

To: Laury Zicari <laury_zicari@fws.gov>, Meagan Racey <meagan_racey@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>

FYI. I just got off the phone talking with David Sharp, Maine AP, concerning lynx issues. He seems interested in story lines relating to the revised approach to the 5-year review (SSA, recovery plan, etc.) and the status of the Friends of Animals lawsuit concerning the Maine trapping ITP and possibly related suits in MT and elsewhere.

I talked to him in general terms about the suit. He was specifically interested in what new regulations MDIFW may be developing to address lethal take in killer-type traps (we don't know at this point in time). It sounds like he may follow up with calls to MDIFW (Mark Latte) and Jim Zelenak for further information.

Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog. Conserving the nature of the Northeast](#)

"Racey, Meagan" <meagan_racey@fws.gov>

From: "Racey, Meagan" <meagan_racey@fws.gov>
Sent: Wed Apr 08 2015 08:18:20 GMT-0600 (MDT)
To: "McCollough, Mark" <mark_mccollough@fws.gov>
CC: Laury Zicari <laury_zicari@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>
Subject: Re: AP interest in an lynx story update

Thanks, Mark!

On Wed, Apr 8, 2015 at 10:16 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:
FYI. I just got off the phone talking with David Sharp, Maine AP, concerning lynx issues. He seems interested in story lines relating to the revised approach to the 5-year review (SSA,

recovery plan, etc.) and the status of the Friends of Animals lawsuit concerning the Maine trapping ITP and possibly related suits in MT and elsewhere.

I talked to him in general terms about the suit. He was specifically interested in what new regulations MDIFW may be developing to address lethal take in killer-type traps (we don't know at this point in time). It sounds like he may follow up with calls to MDIFW (Mark Latte) and Jim Zelenak for further information.

Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Meagan Racey
Public affairs specialist
U.S. Fish and Wildlife Service, Northeast Region
(o) 413-253-8558
(c) 413-658-4386

[Check out our blog. Conserving the nature of the Northeast](#)

From: [Zicari, Laury](#)
To: [Zelenak, Jim](#); [Mark McCollough](#); [Mary Parkin](#)
Subject: Re: Lynx
Date: Wednesday, April 08, 2015 12:24:12 PM
Attachments: [image002.png](#)
[image001.png](#)

your comment was very good. I will also forward to Mary Parkin who was on the team that cooked up the REV and she can maybe provide any additional talking points for us.

On Wed, Apr 8, 2015 at 10:52 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

You all saw my original response to David. He had a follow-up question asking why the SSA process. Below is my response.

If he calls/contacts me regarding the status of things in ME, lawsuit or otherwise, I will most likely point him back to you-all.

Let me know if anything else is needed from here.

Jim

----- Forwarded message -----

From: **Zelenak, Jim** <jim_zelenak@fws.gov>
Date: Tue, Apr 7, 2015 at 8:04 AM
Subject: Re: Lynx
To: "Sharp, David" <DSharp@ap.org>

Well, that's a good question, David. This will be my first go-round with this process, so I'm still learning, but here is a quote from a presentation our HQ (D.C.) office put together to try to explain it to other folks in USFWS.

"The Species Status Assessment Framework (SSA) is foundational to all our Endangered Species program work; it integrates our biological processes into one analysis that has relevance for all our decisions and actions (e.g. listing, section 7 & 10, recovery)."

I think the idea is to bring increased consistency to the process and to generate an analysis that serves multiple purposes and can streamline our federal register notices for listings, 5-year reviews, recovery plans, etc.

Jim

On Tue, Apr 7, 2015 at 7:46 AM, Sharp, David <DSharp@ap.org> wrote:

Why the more detailed SSA process?



David Sharp
Correspondent

ASSOCIATED PRESS

75 Market Street, Suite 402
Portland, ME 04101

Portland, Maine

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: [David_Sharp_AP](#)

F 207.774.6625

From: Zelenak, Jim [mailto:jim_zelenak@fws.gov]

Sent: Tuesday, April 07, 2015 9:26 AM

To: Sharp, David

Cc: mark_mccollough@fws.gov; Meagan Racey; Ryan Moehring; Seth Willey; Jodi Bush; Brent Esmoil; Laury Zicari

Subject: Re: Lynx

David,

After the news release indicating that the 5-year review for lynx would be completed by June 2015 was published, the Service determined that it would be necessary first to apply its relatively new SSA (Species Status Assessment) process to the lynx. This structured threats assessment will involve coordination across 5 Service regions (1, 2, 3, 5, and 6) and with several other federal agencies, at least 15 states, and perhaps 23 Tribal organizations within the range of the lynx DPS, and will likely involve a number of regional expert elicitation meetings involving lynx researchers most familiar with each of the subpopulations within the DPS. The resulting SSA report will then be the basis for a streamlined 5-year review and a recovery plan, unless the SSA and 5-year review indicate that the DPS no longer warrants listing under the Endangered Species Act, in which case a recovery plan would not be necessary.

Some aspects of the time line for this process are still up in the air, but in general we hope to have the SSA report completed this fall and to publish the 5-year review by Dec. 2015. If the SSA and 5-year review indicate that the DPS continues to warrant listing under the Act, we will begin work on a recovery plan, publishing a draft plan by Dec. 2016, and a final plan (after public comment and peer-review) by Dec. 2017. We have a court-ordered deadline of Jan. 15, 2018 for finalizing a recovery plan unless we make a determination, based on the SSA report and 5-year review, that the lynx DPS no longer warrants listing under the Act.

Thus far, in response to our January 2015 request for information pertinent to the 5-year review of the status of the DPS, we have received some useful information from a number of state agencies, industry, conservation groups and the general public. We will evaluate this information and incorporate it as appropriate in our decision making process.

Hope this helps. Let me know if you have questions.

Jim

On Fri, Apr 3, 2015 at 12:39 PM, Sharp, David <DSharp@ap.org> wrote:

Gents:

I'm checking in on the lynx assessment. I'd like to flag any milestones in my calendar. I recall that it's going to be completed this summer. Is it on schedule? Anything else I should be thinking about?

Thanks,

David



ASSOCIATED PRESS

David Sharp

75 Market Street, Suite 402

Correspondent

Portland, ME 04101

Portland, Maine

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: [David_Sharp_AP](#)

F 207.774.6625

The information contained in this communication is intended for the use of the designated recipients named above. If the reader of this communication is not the intended recipient, you are hereby notified that you have received this communication in error, and that any review, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify The Associated Press immediately by telephone at +1-212-621-1898 and delete this email. Thank you.

[IP_US_DISC]

msk dccc60c6d2c3a6438f0cf467d9a4938

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

From: [Parkin, Mary](#)
To: [Zicari, Laury](#)
Cc: [Zelenak, Jim](#); [Mark McCollough](#)
Subject: Re: Lynx
Date: Wednesday, April 08, 2015 1:16:45 PM
Attachments: [image001.png](#)
[image002.png](#)

I'm happy to provide a few talking points about why recovery planning will benefit from the SSA process and why the SSA will allow for the new REV approach to plans. Do you need these sooner rather than later?

Also, the last week of December I'll be at the R6 SSA training session in Denver working with Jim's team on a prototype SSA for the lynx, with specific application to the 5-yr review and recovery plan (do I have that right, Jim?). We should then be able to provide more definitive talking points to queries like David's.

Cheers,
Mary

On Wed, Apr 8, 2015 at 12:23 PM, Zicari, Laury <laury_zicari@fws.gov> wrote:

your comment was very good. I will also forward to Mary Parkin who was on the team that cooked up the REV and she can maybe provide any additional talking points for us.

On Wed, Apr 8, 2015 at 10:52 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

You all saw my original response to David. He had a follow-up question asking why the SSA process. Below is my response.

If he calls/contacts me regarding the status of things in ME, lawsuit or otherwise, I will most likely point him back to you-all.

Let me know if anything else is needed from here.

Jim

----- Forwarded message -----

From: **Zelenak, Jim** <jim_zelenak@fws.gov>
Date: Tue, Apr 7, 2015 at 8:04 AM
Subject: Re: Lynx
To: "Sharp, David" <DSharp@ap.org>

Well, that's a good question, David. This will be my first go-round with this process, so I'm still learning, but here is a quote from a presentation our HQ (D.C.) office put together to try to explain it to other folks in USFWS.

"The Species Status Assessment Framework (SSA) is foundational to all our Endangered Species program work; it integrates our biological processes into one analysis that has relevance for all our decisions and actions (e.g. listing, section 7 & 10, recovery)."

I think the idea is to bring increased consistency to the process and to generate an analysis that serves multiple purposes and can streamline our federal register notices for listings, 5-year reviews, recovery plans, etc.

Jim

On Tue, Apr 7, 2015 at 7:46 AM, Sharp, David <DSharp@ap.org> wrote:

Why the more detailed SSA process?



ASSOCIATED PRESS

David Sharp

75 Market Street, Suite 402

Correspondent

Portland, ME 04101

Portland, Maine

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: [David_Sharp_AP](https://twitter.com/David_Sharp_AP)

F 207.774.6625

From: Zelenak, Jim [mailto:jim_zelenak@fws.gov]

Sent: Tuesday, April 07, 2015 9:26 AM

To: Sharp, David

Cc: mark_mccollough@fws.gov; Meagan Racey; Ryan Moehring; Seth Willey; Jodi Bush; Brent Esmoil; Laury Zicari

Subject: Re: Lynx

David,

After the news release indicating that the 5-year review for lynx would be completed by June 2015 was published, the Service determined that it would be necessary first to apply its relatively new SSA (Species Status Assessment) process to the lynx. This structured threats assessment will involve coordination across 5 Service regions (1, 2, 3, 5, and 6) and with several other federal agencies, at least 15 states, and perhaps 23 Tribal organizations within the range of the lynx DPS, and will likely involve a number of regional expert elicitation meetings involving lynx researchers most familiar with each of the subpopulations within the DPS. The resulting SSA report will then be the basis for a streamlined 5-year review and a recovery plan, unless the SSA and 5-year review indicate that the DPS no longer warrants listing under the Endangered Species Act, in which case a recovery plan would not be necessary.

Some aspects of the time line for this process are still up in the air, but in general we hope to have the SSA report completed this fall and to publish the 5-year review by Dec. 2015. If the SSA and 5-year review

indicate that the DPS continues to warrant listing under the Act, we will begin work on a recovery plan, publishing a draft plan by Dec. 2016, and a final plan (after public comment and peer-review) by Dec. 2017. We have a court-ordered deadline of Jan. 15, 2018 for finalizing a recovery plan unless we make a determination, based on the SSA report and 5-year review, that the lynx DPS no longer warrants listing under the Act.

Thus far, in response to our January 2015 request for information pertinent to the 5-year review of the status of the DPS, we have received some useful information from a number of state agencies, industry, conservation groups and the general public. We will evaluate this information and incorporate it as appropriate in our decision making process.

Hope this helps. Let me know if you have questions.

Jim

On Fri, Apr 3, 2015 at 12:39 PM, Sharp, David <DSharp@ap.org> wrote:

Gents:

I'm checking in on the lynx assessment. I'd like to flag any milestones in my calendar. I recall that it's going to be completed this summer. Is it on schedule? Anything else I should be thinking about?

Thanks,

David



David Sharp
Correspondent
Portland, Maine

dsharp@ap.org

ASSOCIATED PRESS

75 Market Street, Suite 402
Portland, ME 04101

T 207.772.4157

C 207.232.6355

The information contained in this communication is intended for the use of the designated recipients named above. If the reader of this communication is not the intended recipient, you are hereby notified that you have received this communication in error, and that any review, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify The Associated Press immediately by telephone at +1-212-621-1898 and delete this email. Thank you.

[IP_US_DISC]

msk dccc60c6d2c3a6438f0cf467d9a4938

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220

jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

From: [Zelenak, Jim](#)
To: [Parkin, Mary](#)
Cc: [Zicari, Laury](#); [Mark McCollough](#)
Subject: Re: Lynx
Date: Wednesday, April 08, 2015 1:26:46 PM
Attachments: [image001.png](#)
[image002.png](#)

Thanks Mary.

I don't think we need anything else at the moment, and I have some of the SSA and REV materials that Heather Bell and Tara Nicolaysen pointed me to.

I hope you mean end of April, not December.... otherwise, yes - we intend to complete an SSA report that will inform a (hopefully very) streamlined 5-year review. If the 5-year review indicates that lynx continue to warrant listing as "T" or uplisting to "E", then we will proceed, using the REV process, to develop a recovery plan. If the 5-year indicates that delisting is warranted, then we would make a formal determination that a recovery plan is not needed. We have a court order to either finalize a recovery plan or make a determination that one would not promote the conservation and recovery of the DPS (i.e., if the DPS is recovered, no recovery plan is necessary) by Jan. 15, 2018.

That's my understanding...

Jim

On Wed, Apr 8, 2015 at 11:16 AM, Parkin, Mary <mary_parkin@fws.gov> wrote:

I'm happy to provide a few talking points about why recovery planning will benefit from the SSA process and why the SSA will allow for the new REV approach to plans. Do you need these sooner rather than later?

Also, the last week of December I'll be at the R6 SSA training session in Denver working with Jim's team on a prototype SSA for the lynx, with specific application to the 5-yr review and recovery plan (do I have that right, Jim?). We should then be able to provide more definitive talking points to queries like David's.

Cheers,
Mary

On Wed, Apr 8, 2015 at 12:23 PM, Zicari, Laury <laury_zicari@fws.gov> wrote:

your comment was very good. I will also forward to Mary Parkin who was on the team that cooked up the REV and she can maybe provide any additional talking points for us.

On Wed, Apr 8, 2015 at 10:52 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

You all saw my original response to David. He had a follow-up question asking why the SSA process. Below is my response.

If he calls/contacts me regarding the status of things in ME, lawsuit or otherwise, I will most likely point him back to you-all.

Let me know if anything else is needed from here.

Jim

----- Forwarded message -----

From: **Zelenak, Jim** <jim_zelenak@fws.gov>

Date: Tue, Apr 7, 2015 at 8:04 AM

Subject: Re: Lynx

To: "Sharp, David" <DSharp@ap.org>

Well, that's a good question, David. This will be my first go-round with this process, so I'm still learning, but here is a quote from a presentation our HQ (D.C.) office put together to try to explain it to other folks in USFWS.

"The Species Status Assessment Framework (SSA) is foundational to all our Endangered Species program work; it integrates our biological processes into one analysis that has relevance for all our decisions and actions (e.g. listing, section 7 & 10, recovery)."

I think the idea is to bring increased consistency to the process and to generate an analysis that serves multiple purposes and can streamline our federal register notices for listings, 5-year reviews, recovery plans, etc.

Jim

On Tue, Apr 7, 2015 at 7:46 AM, Sharp, David <DSharp@ap.org> wrote:

Why the more detailed SSA process?



ASSOCIATED PRESS

David Sharp

75 Market Street, Suite 402

Correspondent

Portland, ME 04101

Portland, Maine

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: [David_Sharp_AP](https://twitter.com/David_Sharp_AP)

F 207.774.6625

From: Zelenak, Jim [mailto:jim_zelenak@fws.gov]

Sent: Tuesday, April 07, 2015 9:26 AM

To: Sharp, David

Cc: mark_mccollough@fws.gov; Meagan Racey; Ryan Moehring; Seth Willey; Jodi Bush; Brent Esmoil; Laury Zicari

Subject: Re: Lynx

David,

After the news release indicating that the 5-year review for lynx would be completed by June 2015 was published, the Service determined that it would be necessary first to apply its relatively new SSA (Species Status Assessment) process to the lynx. This structured threats assessment will involve coordination across 5 Service regions (1, 2, 3, 5, and 6) and with several other federal agencies, at least 15 states, and perhaps 23 Tribal organizations within the range of the lynx DPS, and will likely involve a number of regional expert elicitation meetings involving lynx researchers most familiar with each of the subpopulations within the DPS. The resulting SSA report will then be the basis for a streamlined 5-year review and a recovery plan, unless the SSA and 5-year review indicate that the DPS no longer warrants listing under the Endangered Species Act, in which case a recovery plan would not be necessary.

Some aspects of the time line for this process are still up in the air, but in general we hope to have the SSA report completed this fall and to publish the 5-year review by Dec. 2015. If the SSA and 5-year review indicate that the DPS continues to warrant listing under the Act, we will begin work on a recovery plan, publishing a draft plan by Dec. 2016, and a final plan (after public comment and peer-review) by Dec. 2017. We have a court-ordered deadline of Jan. 15, 2018 for finalizing a recovery plan unless we make a determination, based on the SSA report and 5-year review, that the lynx DPS no longer warrants listing under the Act.

Thus far, in response to our January 2015 request for information pertinent to the 5-year review of the status of the DPS, we have received some useful information from a number of state agencies, industry, conservation groups and the general public. We will evaluate this information and incorporate it as appropriate in our decision making process.

Hope this helps. Let me know if you have questions.

Jim

On Fri, Apr 3, 2015 at 12:39 PM, Sharp, David <DSharp@ap.org> wrote:

Gents:

I'm checking in on the lynx assessment. I'd like to flag any milestones in my calendar. I recall that it's going to be completed this summer. Is it on schedule? Anything else I should be thinking about?

Thanks,

David

AP

ASSOCIATED PRESS

David Sharp

75 Market Street, Suite 402

Correspondent

Portland, ME 04101

Portland, Maine

T 207.772.4157

dsharp@ap.org

C 207.232.6355

twitter: [David_Sharp_AP](https://twitter.com/David_Sharp_AP)

F 207.774.6625

The information contained in this communication is intended for the use of the designated recipients named above. If the reader of this communication is not the intended recipient, you are hereby notified that you have received this communication in error, and that any review, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify The Associated Press immediately by telephone at +1-212-621-1898 and delete this email. Thank you.

[IP_US_DISC]

msk dccc60c6d2c3a6438f0cf467d9a4938

--

Jim Zelenak, Biologist

U.S. Fish and Wildlife Service

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225 ext. 220

jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:

Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [McCollough, Mark](#)
To: [Meagan Racey](#); [Laury Zicari](#); [Jim Zelenak](#)
Subject: Fwd: Assessment will postpone Canada lynx 5-year review article Portland Press Herald
Date: Monday, April 13, 2015 11:31:38 AM

Meagan - below is the AP story that came from Jim Zelenak and my interview with David Sharp. There are a few things that I would have worded differently. The 500 vs. 750 to 1000 population quote seems to come from the previous AP article. The USFWS has not made a population estimate, and we have concerns about the methods used by MDIFW several years ago. In a recent discussion with MDIFW, they said they are now reluctant to state population estimates for any wildlife species because the public can misinterpret the scientific validity of some estimates and hold them to certain population numbers. Populations can change over relatively short periods of time (lynx certainly change dramatically during their 10-year cycle). Further, relatively simple, "back of the envelope" methods to extrapolate populations often require assumptions that may not be valid and provide no statistical estimate of certainty.

Statements on lynx status in NH and VT could be tightened up and more accurate.

I'm not sure where he got the info about USFWS request to dismiss the case - not from me. I did tell him about the three intervenors.

Glad we work for the "National Fish and Wildlife Service!"

Mark

----- Forwarded message -----

From: **White, Shay** <shay_white@fws.gov>
Date: Mon, Apr 13, 2015 at 10:17 AM
Subject: Assessment will postpone Canada lynx 5-year review article Portland Press Herald
To: Laury Zicari <laury_zicari@fws.gov>, Steven Shepard <steven_shepard@fws.gov>, Thomas Davidowicz <thomas_davidowicz@fws.gov>, "Bentivoglio, Antonio" <antonio_bentivoglio@fws.gov>, Mark McCollough <mark_mccollough@fws.gov>, "Seavey, Fred" <fred_seavey@fws.gov>, Wende Mahaney <wende_mahaney@fws.gov>

Assessment will postpone Canada lynx 5-year review

Based on the review, now expected in December, there will be a recovery plan for the protected cat.

By DAVID SHARP
The Associated Press
Share

The U.S. Fish and Wildlife Service is applying a new threat assessment for federally protected Canada lynx from Maine to Washington state, delaying completion of the first five-year review.

The structured threat assessment will involve several other agencies, at least 15 states and more than 20 Native American tribes. The resulting assessment will serve as the basis of a streamlined five-year review, and a recovery plan if one is necessary, said Jim Zelenak of the U.S. Fish and Wildlife Service in Montana.



Search photos available for purchase: [Photo Store](#) →



Maine is home to the East Coast's only sizable breeding population of Canada lynx, a threatened species. 2005 Associated Press file

The delayed five-year review is the first since Canada lynx were declared threatened in 2000. Designations of critical habitat have been made in parts of Maine, Wyoming, Washington, Montana, Idaho and Minnesota.

Under the new timeline, the federal agency hopes to complete the assessment this fall, instead of this summer, and to complete a draft five-year plan in December, Zelenak said.

Based on the review, there will be a recovery plan to help lynx populations unless the process reveals the cat no longer warrants protection under the Endangered Species Act, he said.

In Maine, the lynx population's fate is tied to the snowshoe hares upon which they feed, and the populations of both are believed to be declining because of lack of suitable habitat for the hares. The end of clear-cutting forestry practices in Maine has allowed forests to fill in, taking away the habitat preferred by hares.

The latest estimates from federal scientists put the number of Canada lynx in Maine at about 500; that's fewer than a state estimate of 750 to 1,000 lynx about five years ago.

Historically, there have been smaller numbers of lynx in New Hampshire, where they're thought to have spread from Maine. There also have been lynx sightings in Vermont.

Several wildlife groups want the federal government to do more to protect lynx.

The Fish and Wildlife Service is facing a lawsuit over its so-called incidental take program, which allows for the deaths of up to three lynx and the catch-and-release of 195 lynx in traps over 15 years in Maine, said Mark McCollough, an endangered species specialist with the National Fish and Wildlife Service based in Maine.

Friends of Animals, which sued in federal court, contends the Fish and Wildlife Service violated federal law by failing to minimize the possibility of lynx being trapped.

The state of Maine, the Maine Trappers' Association and the U.S. Sportsmen's Alliance Foundation have intervened. Lawyers for the federal agency asked for the lawsuit to be dismissed.

--

Shay White
Administrative Officer, CDSO
US Fish and Wildlife Service
Ecological Services
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, Maine 04473
Telephone: 207/866-3344 Ext. 157
Fax: 207/866-3351

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473

Phone 207 866-3344 x115

Cell Phone: 207 944-5709

mark_mccollough@fws.gov



Gifford, Krishna <krishna_gifford@fws.gov>

Fwd: FOR YOUR QUICK REVIEW: DRAFT Project Plan - Lynx SSA, 5-year review, recovery planning

1 message

Gifford, Krishna <krishna_gifford@fws.gov>

Wed, Apr 15, 2015 at 3:04 PM

To: Martin Miller <Martin_Miller@fws.gov>, Mary Parkin <mary_parkin@fws.gov>, Laury Zicari <Laury_Zicari@fws.gov>

Hi Folks - I'm not going to have an opportunity to review this before I leave. Sorry. -Krishna

Krishna Gifford

Candidate & Classification Coordinator
U.S. Fish and Wildlife Service - Northeast Region
Endangered Species Program
300 Westgate Center Dr.
Hadley, MA 01035
413-253-8619 (v); 413-253-8482 (f)

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Wed, Apr 15, 2015 at 2:58 PM

Subject: Fwd: FOR YOUR QUICK REVIEW: DRAFT Project Plan - Lynx SSA, 5-year review, recovery planning

To: Mark Sattelberg <mark_sattelberg@fws.gov>, Tyler Abbott <tyler_abbott@fws.gov>, Grant Canterbury <grant_canterbury@fws.gov>, Ben Conard <ben_conard@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Dennis Mackey <dennis_mackey@fws.gov>, Gary Miller <gary_miller@fws.gov>, Rollie White <rollie_white@fws.gov>, Paul Henson <paul_henson@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Brady McGee <Brady_McGee@fws.gov>, Jessica Hogrefe <jessica_hogrefe@fws.gov>, Paul Casey <paul_casey@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Martin Miller <martin_miller@fws.gov>, Mary Parkin <mary_parkin@fws.gov>, Laury Zicari <laury_zicari@fws.gov>

Cc: Bridget Fahey <bridget_fahey@fws.gov>, Tara Nicolaysen <tara_nicolaysen@fws.gov>, Heather Bell <heather_bell@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Jeffrey Dillon <jeffrey_dillon@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Leslie Ellwood <Leslie_Ellwood@fws.gov>, Kate Novak <kate_novak@fws.gov>, Lisa Solberg Schwab <lisa_solbergschwab@fws.gov>, Michelle Eames <Michelle_Eames@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Jeff Krupka <Jeff_Krupka@fws.gov>, Karl Halupka <Karl_Halupka@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Seth Willey <seth_willey@fws.gov>

Hello.

Attached please find our DRAFT project plan for Canada lynx. We are requesting your review of the draft document with any suggested revisions or comments by April 24 COB.

The Project Plan discusses our intention to apply the Species Status Assessment (SSA) framework and complete an SSA report to inform and streamline the five-year review for the lynx DPS as well as subsequent recovery plan and future listing rules as needed based on the SSA and five-year review.

The Project Plan also specifically identifies the level of involvement that we are requesting from each involved office. Committed participation and assistance from the other regions and field offices within the DPS range will be essential to completing the tasks outlined in the draft plan particularly given the broad geographic distribution of the DPS, the differing management and conservation issues facing the various subpopulations, and the need to coordinate with States, Tribes, other Federal agencies, and our counterparts in southern Canada,

Please review the attached draft and provide Jim Zelenak with your comments/concerns no later than April 24. If you require additional time for your review, please contact us to discuss this.

Thank you for your time. JB

As an aside, if anyone is interested in attending the SSA workshop April 29-30 in Denver please contact Jim Zelenak. This is pretty short notice, but knowledgeable staff may find it worthwhile.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office

585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205



2015 04 15 DRAFT Proj Plan Canada Lynx 5-YR .docx

50K

**DRAFT CANADA LYNX PROJECT PLAN TO COMPLETE
A SPECIES STATUS ASSESSMENT, FIVE-YEAR REVIEW, AND RECOVERY PLAN**

April 2015

Action: The Service will conduct a species status assessment (SSA) as a first step to understand the current status of the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*), currently listed as threatened under the Endangered Species Act (Act). This SSA will serve as the basis for the five-year status review (initiated in 2007; 72 FR 19549) required under the Act and to inform and streamline the court-ordered recovery plan (due January 15, 2018), assuming such a plan necessary¹. The SSA report would also provide the scientific foundation to support future rulemaking in accordance with the Act should the five-year review indicate that a change in the DPS's listing status is warranted.

Goals of the Project Plan: (1) To facilitate application of the SSA framework to produce a scientifically defensible five-year review of the status of the lynx DPS and a subsequent recovery plan if one is deemed necessary; and (2) to ensure that expectations for these processes are clear including approach, roles and responsibilities, and schedule, and for managers to be aware of and have agreed to these expectations.

Project Approach: We intend to apply the SSA framework to the lynx DPS and use the SSA results to inform both the five-year review and the recovery planning process. The lead field office (FO) will work with other regions and FOs in the DPS range to gather and evaluate all relevant information that has become available since our March 2000 listing rule (65 FR 16053) and our July 2003 Remanded Determination of Status (68 FR 40076) for the lynx DPS. We will avail ourselves of recent efforts to summarize the available scientific literature for lynx, including the September 2014 final revised critical habitat designation for the DPS (79 FR 54781) and the 2013 revised interagency Lynx Conservation Assessment and Strategy (LCAS; http://www.fs.fed.us/biology/resources/pubs/wildlife/LCAS_revisedAugust2013.pdf). The FOs will keep partner agencies informed about progress and request their participation and reviews as appropriate.

Species Status Assessment: The SSA framework is national Service guidance providing a new methodology for assessing the status of species which can help inform species listing, status, and recovery determinations the Service is required to make in accordance with section 4(c)(2) of the Act (<https://sites.google.com/a/fws.gov/ssa/about-ssa>). Using the SSA framework, we will evaluate the viability of the lynx DPS and potential threats to its viability using the principles of representation, resilience, and redundancy. The SSA also will provide critical information needed to guide the recovery planning process including identification of the

¹ The Act requires recovery plans for listed species unless a determination is made that such plan will not promote the conservation of the species. If the DPS warrants delisting, we would likely pursue a formal determination that the species is exempt from recovery planning as such a plan would be unnecessary (if the species is already recovered, a plan is not needed to move the species to the point of recovery and would therefore not promote the conservation of the species). Although the five-year review is not a final agency action, the memorandum exempting the species from recovery planning (should we reach that conclusion) would be.

primary threats to the lynx DPS that remain to be resolved, if any. Completion of the SSA is the first step in this process. We anticipate that the SSA will be completed by October 2015.

Five-year Review: The five-year review, required by statute, is envisioned as the second step in this process. We anticipate that the five-year review would be a streamlined document relying heavily on and referring to the SSA. The five-year review will consider the SSA's scientific determinations and make recommendations regarding the status of the DPS in accordance with the Act. The three possible outcomes of the five-year review are that the lynx DPS should: (1) remain listed as threatened; (2) be uplisted to endangered; or (3) be delisted. Outcome (1) would indicate the need to next complete a recovery plan by the court-ordered deadline; outcome (2) would indicate that both a recovery plan and a future listing rule are needed; and outcome (3) would require both a formal determination via memorandum that the DPS is exempt from recovery planning and a future listing rule. We anticipate the five-year review will be drafted by November 2015 and finalized by January 2016.

Recovery Plan: If a recovery plan is necessary, it will be informed by both the SSA and the five-year review. The recovery plan would include an introduction summarizing the recovery vision (what a recovered DPS would "look" like) and recovery strategy (the route selected to get the species to recovery). It also would include: (1) objective and measurable criteria that when met would allow delisting (including, to the extent feasible, demographic and threats-based recovery criteria); (2) site-specific management actions needed to achieve the criteria; and (3) time and cost estimates to achieve delisting. Pursuant to the Service's new recovery paradigm, the Recovery Enhancement Vision (REV; USFWS 2014, <https://sites.google.com/a/fws.gov/rev/>), the SSA will facilitate development of a streamlined recovery plan that focuses on these three statutory requirements. We intend to complete the draft recovery plan by October 2016. The recovery planning process will include peer review and opportunities for public review and comment on the draft recovery plan prior to completion of a final recovery plan. The recovery plan, if necessary, will be finalized prior to the January 15, 2018 court deadline.

Project Lead: This project will be led by the Montana Ecological Services Field Office (MTFO). Within this office, Jim Zelenak is the species lead and will serve as the project and team lead. This role includes cross-regional intra-Service organizing, coordinating with outside partners and experts as appropriate, and developing a project schedule and ensuring adherence to associated deadlines. It also includes primary authorship of the SSA report, five-year review and, if necessary, the recovery plan.

Project Team: The Mountain-Prairie Region (6) is the lead region for lynx. However, within the DPS range, lynx subpopulations currently occur in parts of 9 states (CO, ID, ME, MN, MT, NH, VT, WA, and WY). Lynx associated with these subpopulations or other lynx populations in southern Canada also may occur (usually rarely, intermittently, and temporarily) in other states (MI, ND, NE, NM, NY, OR, SD, UT, and WI), and dispersing lynx also have occurred very rarely in CT, IA, IL, IN, MA, PA, and NV. Because the DPS spans parts of four other Service regions (1, 2, 3, and 5), it will be especially important that field biologists most familiar with the status of lynx in the various subpopulations within the DPS assist with (1) collection and interpretation of information relating to the status of and potential threats to those

subpopulations; (2) contacting and arranging participation by lynx experts most familiar with the status, ecology, population dynamics, and habitat needs of those subpopulations; and (3) writing, editing, and reviewing relevant parts of the SSA report, five-year review, and recovery plan, if needed. We expect that the appropriate biologists from the Maine, Twin Cities, Northern Idaho, Wenatchee, Wyoming, Colorado, and Western Colorado FOs will receive supervisory approval to participate consistently on the Project Team and contribute meaningfully to the development, review, and completion of the SSA report, five-year review, and recovery plan. We further expect that biologists from the New England, New York, Michigan, Wisconsin, Idaho, Eastern Idaho, Spokane, Oregon, Utah, and New Mexico FOs will receive supervisory approval to participate as needed in the development, review and completion of these documents.

Management Team: In addition to field biologists, we expect that Field Supervisors from the Maine, Twin Cities, Northern Idaho, Wenatchee, Wyoming, Colorado, and Western Colorado FOs will assist with coordination with State and Tribal and other federal stakeholders, participate in document review, and obtain regional office (RO) concurrence with status determinations and final decisions/documents. RO representation from affected regions also is essential to this process, as is headquarters (HQ) participation and guidance. We expect that regional ESA Branch Chiefs and/or regional Recovery Coordinators from regions 1, 2, 3, and 5 and HQ Listing and/or Recovery staff will participate in document review and concurrence processes. Legal staff may also engage or be consulted at various points in this process.

Focus on Science First – We intend to conduct a thorough scientific review of the lynx DPS and to work with our partners to make sure we have and use the best available information to develop the SSA report, the five-year review, and to guide any subsequent recovery planning. During the SSA and development of the five-year review, we will conduct a structured threats assessment using outlines, webinars, expert elicitation, and other intermediate products, and will brief the Management Team as necessary throughout the process. During the recovery planning process, we will also bring together experts from the lynx research and management arenas.

SSA, five-year Review, and Recovery Planning Collaborative Process: We have broken the SSA, five-year review, and recovery planning/listing processes down into the following seven phases:

- **Phase 1** – Information Collection. The lynx’s current distribution in the contiguous U.S. and some aspects of its habitat requirements are fairly well-understood; however, we will seek to better understand and analyze its historic and current distributions, subpopulation sizes and status, and the degree to which DPS subpopulations rely on immigration from populations in Canada. Additionally, we will focus on the numbers and productivity of lynx in each of the DPS subpopulations, how these vary over time, the causes of the variation, and the quality and conservation status of lynx and hare habitats within the DPS range. We will collect and evaluate all relevant information that has become available since the 2000 Final Rule listing the DPS as threatened and subsequent determinations. We expect available information to be primarily in the form of published, peer-reviewed literature obtainable through academic search engines. We will also gather government reports (e.g., the recently-revised LCAS and survey and

monitoring reports from federal, State and Tribal partners) and review legal and policy considerations.

- **Phase 2** – Assessment of the DPS’s Conservation Status and Relevant Threats, and Completion of the SSA Report. With the information gathered in Phase 1, we will identify and evaluate historical, current, and future threats to lynx and their magnitude and relative impact on the viability of the subpopulations that constitute the DPS. We will conduct a structured threats assessment, using outlines, webinars and other intermediate products, and brief the Project and Management teams as necessary through the process. We will compile and analyze this information in the SSA report. We expect Project Team members to participate actively in the collection and interpretation of information specific to DPS subpopulations and potential threats to them in their geographic areas and to coordinate locally with state and federal agencies, Tribes, conservation organizations, the media and the public. We expect Management Team members from each region to review, edit, and approve materials provided by their Project Team members in a timely manner.
- **Phase 3** – Decision Making. The FO will make a preliminary recommendation about the DPS’s legal status (threatened, endangered, or recovered), brief R6 leadership, and then provide it for review and comment by the rest of the Project and Management teams. A final decision on the status of the DPS will be made by R6 Regional Director.
- **Phase 4** – Drafting and disseminating the five-year Review. Based on the SSA report and the R6RD decision on the DPS’s status, the lead FO biologist will draft the five-year review with input from and review by the Project and Management teams. We will work with R6 EA staff, who will work with their counterparts in the affected regions, to draft a news release announcing results and availability of the five-year review and supporting SSA report. We will post both documents at the ECOS Species Profile web page (<http://ecos.fws.gov/speciesProfile/profile/speciesProfile?spcode=A073>).
- **Phase 5** – Next Steps. There are three possible outcomes of the five-year review, each with different listing and recovery requirements and time lines.
 - **Outcome 1:** The lynx DPS continues to warrant listing as threatened under the Act (i.e., the threat for which the DPS was listed has not been adequately addressed and/or a new threat[s] has been identified such that the DPS remains likely to become endangered within the foreseeable future throughout all or a significant portion of its range). In this case, a recovery plan would be necessary, so we would convene a Recovery Team and implement the REV process to develop draft and final recovery plans consistent with the court-ordered time line for completing the final plan by January 2018. We expect that a streamlined recovery plan would be completed that relies heavily on and references the SSA report and the five-year review;
 - **Outcome 2:** The DPS warrants uplisting to endangered status (i.e., the threat for which the DPS was listed remains unresolved or has increased and/or a new threat[s] has been identified such that the DPS is now determined to be in danger of extinction throughout all or a significant portion of its range). In this case, both a recovery plan and a future listing rule would be necessary. As above, we would develop draft and final recovery plans that would rely heavily on and reference the SSA report and the five-year review;

Commented [ZJ1]: Yes?

- Outcome 3: The DPS is deemed recovered and warrants delisting (i.e., the threat for which the DPS was listed is found to have been adequately addressed and no new threat[s] has been identified that is expected to endanger the DPS throughout all or a significant portion of its range now or in the reasonably foreseeable future). In this case, we would recommend a formal determination that the species is exempt from recovery planning and we would draft a memorandum to that effect. This outcome would also indicate the need for a future listing rule.
- **Phase 6** – Document Review, Concurrence, Surnaming, and *Federal Register* Publication. We expect that the SSA report, five-year review, and recovery plan will all be reviewed by each member of the Project and Management teams and that all final documents will receive concurrence from the other regions. Each reviewer will focus on their role and refrain from word-smithing or second guessing issues outside their area of expertise. Each review will be completed in a timely manner. For *Federal Register* documents, we anticipate surnaming by R6RD, RSOL, and HQ prior to publication.
- **Phase 7** – Outreach. We will work with R6 EA staff and their counterparts in the other regions to develop communications plans for the SSA, five-year review, and/or recovery plan as needed. We will communicate to all affected stakeholders and the public about the action we are taking and what it means for them, as laid out in the communications plan.

Roles and Responsibilities: Staff from FOs, ROs, and HQ offices will be expected to work together collaboratively to collect information, conduct analyses, and assist in developing products necessary to complete the actions identified in this project plan. Management of the process and completion of these actions, though led by the MTFO, will be the shared responsibility of the ROs and FOs within the DPS range. Further, we expect that the individuals responsible for these products will be free to communicate and share work products as needed to facilitate an efficient process. However, we also expect that all team members will keep their supervisors apprised of progress and any issues that arise. If necessary to resolve significant issues of disagreement, we will follow the elevation process outlined in the August 13, 2009 “Section 4 Process Memo” (available on the R6 Listing Sharepoint site) until an updated process is developed. Other specific roles and responsibilities are described above in “Project Lead,” “Project Team,” “Management Team,” and “SSA, five-year Review, and Recovery Planning Collaborative Process.”

Schedule: The Service announced initiation of the lynx DPS five-year review in April 2007 (72 FR 19549 19551) but was unable to complete a review then because of court deadlines requiring that we revise the 2006 and 2009 critical habitat designations. The initial notice requested information by June 18, 2007, but it was not a formal comment period and noted that we accept new information about all listed species at any time. At that time, we received comments or information from seven respondents; two State agencies and five environmental/conservation Non-governmental organizations (NGOs). The status review portion of the current project was re-initiated in October 2014, when a biologist was assigned by the MTFO to begin gathering information to evaluate threats to the lynx DPS and update its status accordingly. In December 2014, the MTFO drafted a “Dear Interested Party” letter announcing the renewed five-year review effort, which was sent to federal, State, and Tribal partners in Montana, as well as to other Service regions and FOs within the DPS range as a template for use in notifying their

partners of the effort. In January 2015, the Service prepared and distributed a news release announcing the five-year review and proposed completion date of June 2015, and soliciting information for consideration in the review. To date, we have received responsive information from several federal, State and Tribal agencies, industry organizations, and environmental/conservation NGOs. In March 2015, it was determined that application the SSA Framework to the lynx DPS should precede (and facilitate streamlining of) the five-year review and subsequent recovery plan, if needed.

Ultimately, the above goals are intended to inform the need for and content within a recovery plan. We have a court order to complete a recovery plan by January 2018 unless the Service determines that the DPS warrants delisting and, therefore, that a recovery plan is not necessary. To meet this goal, we anticipate having a draft recovery plan written and beginning the formal review process by July 2016. A list and timing of larger milestones associated with these actions can be found in the attached Appendix A.

Coordination: A range-wide kick-off call will be held in April or May 2015 to seek commitments from relevant ROs and FOs, to familiarize team members with the process and timeline, and respond to any issues relevant to the SSA, five-year review, and future recovery planning. Subsequent coordination calls with the Project Team, coordinated by the MTFO, will be held on a monthly basis. More frequent calls may be organized around particularly challenging issues or during particularly challenging points (such as when a deadline is approaching). These calls will include other Service offices and regions as necessary. Additional calls or meetings with affected State, Tribal, and other federal agencies will be scheduled as needed. Meeting internal and court-ordered deadlines for the SSA, five-year review, and recovery plan is dependent on all parties fulfilling their roles according to the timeline herein. This project plan may also inform partner and stakeholder expectations.

Other FWS Regions and Programs: The lynx DPS occurs (or lynx “may occur”) within parts of Service regions 1, 2, 3, 5, and 6, and this effort will require participation by the ROs and Ecological Services FOs in those regions, along with potential participation by other programs such as Refuges and Partners for Fish and Wildlife. FO participation will be needed from the following states: R1 (ID, OR, WA); R2 (NM), R3 (MI, MN, WI), R5 (ME, NH, NY [?], VT), and R6 (CO, MT, UT, WY).

Affected State Agencies: It will be necessary and helpful to coordinate with the wildlife and natural resources management agencies of each of the states listed above. Coordination will be especially important with the following state agencies: Maine Department of Inland Fisheries and Wildlife; Minnesota Department of Natural Resources; Montana Fish, Wildlife and Parks; Montana Department of Natural Resources and Conservation; Idaho Fish and Game; Washington State Department of Fish and Wildlife; Washington State Department of Natural Resources; Wyoming Game and Fish Department; Colorado Division of Wildlife; and New Mexico Department of Game and Fish. State agencies within the DPS range were notified of the renewed five-year review effort in December 2014 and January 2015, and they will be contacted as appropriate by FOs and/or ROs during development of the SSA, five-year review, and recovery planning efforts. We anticipate at least one meeting with affected states during

development of the SSA and at least one during recovery planning. We may also solicit participation by State biologists and/or wildlife managers on a recovery team if one is convened.

Other Federal Agencies: Federal agency coordination will follow the July 3, 2013 *Interagency Coordination for Rule Development* memo and will include the USDA Forest Service, Bureau of Land Management, National Park Service, and Bureau of Indian Affairs. Federal agencies within the DPS range were notified of the renewed five-year review effort in December 2014 and January 2015, and they will be contacted as appropriate by FOs and/or ROs during development of the SSA, five-year review, and recovery planning efforts.

Commented [ZJ2]: NRCS?

Affected Tribes: Tribal lands within the DPS range include those of the Aroostook Band of Micmac Indians, the Houlton Band of Maliseets, the Passamaquoddy Tribe, and the Penobscot Indian Nation in Maine; the Bois Forte Band of Chippewa, Fond du Lac Band of Lake Superior Chippewa, Grand Portage Chippewa, Leech Lake Band of Ojibwe, Mille Lacs Band of Ojibwe, Red Lake Band of Chippewa, and White Earth Nation in Minnesota; the Confederated Salish and Kootenai Tribes of the Flathead Indian Reservation and the Blackfeet Tribe of the Blackfeet Reservation in Montana; the Coeur d'Alene Tribe, Nez Perce Tribe, and Shoshone-Bannock Tribes in Idaho; the Confederated Tribes of the Colville Reservation, the Kalispel Tribe of Indians, and the Spokane Tribe of Indians in Washington; the Wind River Indian Reservation in Wyoming; the Uintah and Ouray Indian Reservation in Utah; and the Ute Mountain and Southern Ute Indian Reservations in Colorado. Tribes within the DPS range were notified of the renewed five-year review effort in December 2014 and January 2015, and they will be contacted as appropriate by regional Tribal Liaisons during development of the SSA, five-year review, and recovery planning efforts.

Commented [ZJ3]: We will need each RO/FO or regional Tribal Liaison to help us verify these Tribal lands that are in the DPS "range." This is the best I could do using maps/info readily available on line. Includes Tribal lands within critical habitat as well as those where occasional lynx occurrence would not be surprising. Does not include all tribal lands in all the 14 states originally defined as the DPS range.

International Coordination: Because of the suspected importance of connectivity between DPS subpopulations and lynx populations in southern Canada in the persistence of the DPS subpopulations, it will be important that we coordinate with and seek information from our counterparts in the Canadian conservation, management, and lynx research communities. We will seek information on the status of and threats, if any, to lynx populations in Canada that are adjacent to and interact with DPS subpopulations.

Budget: No additional funding is available to assist in this effort. Participating offices should fund their participation through existing base funding. We will likely need GIS support for these actions, including high-quality digital maps and hard copy maps.

Project Plan Revisions: In light of the court deadline for the final recovery plan, we expect that we will meet deadlines for all products and any quality benchmarks associated with those products. However, this project plan and the Project Overview can be revised at any time with the agreement of the ARD and Project Leader. If there are unexpected changed circumstances due to competing workloads, budgets, resources, etc., we expect early communication about the delay and discussion with the Project Lead, Project Team, and Management Team about resolution. Lead time on potential delays should be commensurate with expected delay. For example, a request for two additional months should not be made the week before a project is due. Further, whatever the results of the five-year review, we expect this project plan will need to be revisited soon after the five-year review is signed.

Post-Project Debriefing: The Project Team and Management Team commit to having a conversation after the completion of the project to discuss how this process was implemented, what went well, and what can be done better in the future. This feedback on the process is necessary to ensure we are always using the best available practices and working towards greater efficiencies.

Project Overview:

Guidance, policy, and template documents can be found at:
<https://fishnet.fws.doi.net/regions/6/es/endangeredspecies/>

Personnel involved in the completion of the Canada lynx SSA, Five-Year Review, and Recovery Plan (if necessary)				
Roles	Field Office	Regional Office	HQ	RSOL
Project Leads	Lead FO Biologist Jim Zelenak	Lead RO Biologist Seth Willey	Lead HQ Biologists Heather Bell Tara Nicolaysen	Lead SOL Dana Jacobsen
Project Team	Biologists from the Maine, Twin Cities, Northern Idaho, Wenatchee, Wyoming, Colorado, and Western Colorado FOs.			
Management Team	Jodi Bush, MTFO, Brent Esmoil MTFO; Field Supervisors from the Maine, Twin Cities, Northern Idaho, Wenatchee, Wyoming, Colorado, and Western Colorado FOs.	Bridget Fahey, R6 TE Chief Nicole Alt, R6 Geographic Supervisor Mike Thabault, R6 ARD-ES Matt Hogan, R6 Deputy RD Noreen Walsh, R6 RD Recovery Coordinators, TE Chiefs, and ARDs-ES - R1, R2, R3, and R5	??	
Others Involved	Biologists from the New England, New York, Michigan, Wisconsin, Idaho, Eastern Idaho, Spokane, Oregon, Utah, and New Mexico FOs as needed	Ext Affairs Specialists, ARDs-Ext Affairs, and Tribal Liaisons - R6, R1, R2, R3, and R5		

Document Review:

Jim Zelenak is the lead author for these actions. Other MTFO reviewers include Brent Esmoil and Jodi Bush. All members of the Project Team are expected to provide appropriate scientific review of draft documents. Management Team members are expected to review final documents

and provide regional concurrence with them as needed. Seth Willey and Bridget Fahey are expected to provide appropriate policy review for the drafts. Dana Jacobsen will provide an assessment of legal risk. Mike Thabault will provide an abbreviated review for “big picture” issues.

Signed:

Assistant Regional Director, R6

Project Leader, Montana Field Office

Project Leader, Wyoming Field Office

Project Leader, Colorado Field Office

Project Leader, W. Colorado Field Office

Assistant Regional Director, R1

Project Leader, Wenatchee Field Office

Project Leader, E. Washington Field Office

Project Leader, N. Idaho Field Office

Assistant Regional Director, R2

Project Leader, New Mexico Field Office

Assistant Regional Director, R3

Project Leader, Twin Cities Field Office

Assistant Regional Director, R5

Project Leader, Maine Field Office

Project Leader, New England Field Office

Commented [SLW4]: Should we list the offices we envision signing?

JZ – All listed from whom we will require commitment/participation. May also need to reach out to Oregon, Utah, Michigan, Wisconsin, Vermont, perhaps New York...

Appendix A
Schedule for Canada Lynx Five-Year Review and, if necessary, Recovery Plan

Date	Milestone
April 18, 2007	FWS announced initiation of five-year review of lynx DPS (72 FR 19549).
Dec. 8, 2014	"Dear Interested Party" letter sent to Montana State, Federal, Tribal partners and to other FWS ROs and FOS announcing the re-initiation of the five-year review for lynx.
Jan. 13, 2015	FWS news release announcing five-year review and soliciting information to consider in the review.
Ongoing beginning January 2015	Work with partners to collect and evaluate available data and information and assess threat factors (USFS, BLM, NPS, BIA, State wildlife/natural resources agencies, and Tribes).
April or May, 2015	Kick-off call with relevant team members. Additional coordination calls to be held monthly. The MTFO lead will coordinate the monthly calls. These calls will include other FWS offices.
Apr. 29-30, 2015	SSA workshop to include lynx discussion/case study (R6 RO).
May – July 2015	Set up meetings, develop and conduct a structured threats assessment, using outlines, webinars and other intermediate products, and brief the Management Team as necessary through the process. Draft SSA report with assistance from other regions and FOs.
May 20, 2015	Workshop(s) with State agencies to discuss SSA process and DPS status and threats.
June 3, 2015	Expert elicitation meeting(s) on distribution, status, and threats (including climate change).
July – Sept. 2015	Brief ROs and HQ on findings; submit SSA report for RO/HQ review and concurrence.
Oct. – Dec. 2015	Draft streamlined five-year review; submit for RO/HQ/RSOL review/concurrence/surname; publish five-year review in FR.
Jan. 2016	Begin recovery planning processes if necessary; select and invite Recovery Team members.
Jan. – June 2016	Develop DRAFT recovery plan including goals and objectives, implementation plan.
July – Sept. 2016	RO/HQ/RSOL review/surname of DRAFT recovery plan. Review and concurrence from R1, R2, R3, and R5 as needed.
October 2016	Release DRAFT recovery plan to public and commence peer review and/or publish proposed listing rule.
December 2016	60-day comment period closes on DRAFT recovery plan; peer review also complete.
January –June 2017	Revise DRAFT recovery plan; draft the FINAL recovery plan.
July-Sept. 2017	RO/HQ/RSOL review/surname of FINAL recovery. Review and concurrence from R1, R2, R3, and R5.
December 2017	Finalize recovery plan, publish in FR, and post on webpage; conduct appropriate outreach. Communicate with court as necessary regarding completion and submission of FINAL recovery plan in accordance with court-ordered deadline.

From: [Zicari, Laury](mailto:Zicari,Laury)
To: [Mark McCollough](mailto:Mark.McCollough)
Subject: Fwd: FOR YOUR QUICK REVIEW: DRAFT Project Plan - Lynx SSA, 5-year review, recovery planning
Date: Thursday, April 16, 2015 8:41:37 AM

see note Jim Z is counting on yall. He will not be disappointed!

----- Forwarded message -----

From: **Miller, Martin** <martin_miller@fws.gov>
Date: Thu, Apr 16, 2015 at 8:39 AM
Subject: Re: FOR YOUR QUICK REVIEW: DRAFT Project Plan - Lynx SSA, 5-year review, recovery planning
To: "Parkin, Mary" <mary_parkin@fws.gov>
Cc: "Gifford, Krishna" <krishna_gifford@fws.gov>, Laury Zicari <Laury_Zicari@fws.gov>

Mary - please compile all R5 comments and submit to Jim by April 24. I likely will not have time to review. Thanks, Marty

On Wed, Apr 15, 2015 at 10:16 PM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi all,

I've got a copy of this project plan, and we're using to help frame our needs for the SSA workshop in Denver. Our aims at the workshop are to run through an extremely rapid prototype of a lynx SSA, and to outline a strategy for completing the lynx SSA and 5-year review by December, including information and coordination/expert elicitation needs.

I'm co-facilitating the lynx workshop team with Jennifer Syzmanski. Since it's not going to involve true expert elicitation, we want to reserve the participation of busy folks like Mark (*especially* Mark) for the real deal. At this point, only Jim and Seth Willey are attending as "team members."

Laury, on a call with Jim yesterday, he emphasized how critical MEFO's input is going to be to this process, just so you know!

Cheers,
Mary

On Wed, Apr 15, 2015 at 3:04 PM, Gifford, Krishna <krishna_gifford@fws.gov> wrote:

Hi Folks - I'm not going to have an opportunity to review this before I leave. Sorry. -
Krishna

Krishna Gifford

Candidate & Classification Coordinator
U.S. Fish and Wildlife Service - Northeast Region
Endangered Species Program
300 Westgate Center Dr.
Hadley, MA 01035
413-253-8619 (v); 413-253-8482 (f)

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Wed, Apr 15, 2015 at 2:58 PM

Subject: Fwd: FOR YOUR QUICK REVIEW: DRAFT Project Plan - Lynx SSA, 5-year review, recovery planning

To: Mark Sattelberg <mark_sattelberg@fws.gov>, Tyler Abbott <tyler_abbott@fws.gov>, Grant Canterbury <grant_canterbury@fws.gov>, Ben Conard <ben_conard@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Dennis Mackey <dennis_mackey@fws.gov>, Gary Miller <gary_miller@fws.gov>, Rollie White <rollie_white@fws.gov>, Paul Henson <paul_henson@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Brady McGee <Brady_McGee@fws.gov>, Jessica Hogrefe <jessica_hogrefe@fws.gov>, Paul Casey <paul_casey@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Martin Miller <martin_miller@fws.gov>, Mary Parkin <mary_parkin@fws.gov>, Laury Zicari <laury_zicari@fws.gov>

Cc: Bridget Fahey <bridget_fahey@fws.gov>, Tara Nicolaysen <tara_nicolaysen@fws.gov>, Heather Bell <heather_bell@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Jeffrey Dillon <jeffrey_dillon@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Leslie Ellwood <Leslie_Ellwood@fws.gov>, Kate Novak <kate_novak@fws.gov>, Lisa Solberg Schwab <lisa_solbergschwab@fws.gov>, Michelle Eames <Michelle_Eames@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Jeff Krupka <Jeff_Krupka@fws.gov>, Karl Halupka <Karl_Halupka@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Seth Willey <seth_willey@fws.gov>

Hello.

Attached please find our DRAFT project plan for Canada lynx. We are requesting your review of the draft document with any suggested revisions or comments by April 24 COB.

The Project Plan discusses our intention to apply the Species Status Assessment (SSA) framework and complete an SSA report to inform and streamline the five-year review for the lynx DPS as well as subsequent recovery plan and future listing rules as needed based on the SSA and five-year review.

The Project Plan also specifically identifies the level of involvement that we are requesting from each involved office. Committed participation and assistance from the other regions and field offices within the DPS range will be essential to completing the tasks outlined in the draft plan particularly given the broad geographic distribution of the DPS, the differing management and conservation issues facing the various subpopulations, and the need to coordinate with States, Tribes, other Federal agencies, and our counterparts in southern Canada,

Please review the attached draft and provide Jim Zelenak with your comments/concerns no later than April 24. If you require additional time for your review, please contact us to discuss this.

Thank you for your time. JB

As an aside, if anyone is interested in attending the SSA workshop April 29-30 in Denver please contact Jim Zelanak. This is pretty short notice, but knowledgeable staff may find it worthwhile.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Martin Miller, Chief, Division of Endangered Species, Northeast Region, U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035, 413-253-8615

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

From: [Parkin, Mary](#)
To: [Miller, Martin](#)
Cc: [Gifford, Krishna](#); [Laury Zicari](#)
Subject: Re: FOR YOUR QUICK REVIEW: DRAFT Project Plan - Lynx SSA, 5-year review, recovery planning
Date: Thursday, April 16, 2015 9:54:47 AM

Will do.

On Thu, Apr 16, 2015 at 8:39 AM, Miller, Martin <martin_miller@fws.gov> wrote:
Mary - please compile all R5 comments and submit to Jim by April 24. I likely will not have time to review. Thanks, Marty

On Wed, Apr 15, 2015 at 10:16 PM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi all,

I've got a copy of this project plan, and we're using to help frame our needs for the SSA workshop in Denver. Our aims at the workshop are to run through an extremely rapid prototype of a lynx SSA, and to outline a strategy for completing the lynx SSA and 5-year review by December, including information and coordination/expert elicitation needs.

I'm co-facilitating the lynx workshop team with Jennifer Syzmanski. Since it's not going to involve true expert elicitation, we want to reserve the participation of busy folks like Mark (*especially* Mark) for the real deal. At this point, only Jim and Seth Willey are attending as "team members."

Laury, on a call with Jim yesterday, he emphasized how critical MEFO's input is going to be to this process, just so you know!

Cheers,
Mary

On Wed, Apr 15, 2015 at 3:04 PM, Gifford, Krishna <krishna_gifford@fws.gov> wrote:
Hi Folks - I'm not going to have an opportunity to review this before I leave. Sorry. -
Krishna

Krishna Gifford

Candidate & Classification Coordinator
U.S. Fish and Wildlife Service - Northeast Region
Endangered Species Program
300 Westgate Center Dr.
Hadley, MA 01035
413-253-8619 (v); 413-253-8482 (f)

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Wed, Apr 15, 2015 at 2:58 PM

Subject: Fwd: FOR YOUR QUICK REVIEW: DRAFT Project Plan - Lynx SSA, 5-year

review, recovery planning

To: Mark Sattelberg <mark_sattelberg@fws.gov>, Tyler Abbott <tyler_abbott@fws.gov>, Grant Canterbury <grant_canterbury@fws.gov>, Ben Conard <ben_conard@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Dennis Mackey <dennis_mackey@fws.gov>, Gary Miller <gary_miller@fws.gov>, Rollie White <rollie_white@fws.gov>, Paul Henson <paul_henson@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Brady McGee <Brady_McGee@fws.gov>, Jessica Hogrefe <jessica_hogrefe@fws.gov>, Paul Casey <paul_casey@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Martin Miller <martin_miller@fws.gov>, Mary Parkin <mary_parkin@fws.gov>, Laury Zicari <laury_zicari@fws.gov>

Cc: Bridget Fahey <bridget_fahey@fws.gov>, Tara Nicolaysen <tara_nicolaysen@fws.gov>, Heather Bell <heather_bell@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Jeffrey Dillon <jeffrey_dillon@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Leslie Ellwood <Leslie_Ellwood@fws.gov>, Kate Novak <kate_novak@fws.gov>, Lisa Solberg Schwab <lisa_solberg schwab@fws.gov>, Michelle Eames <Michelle_Eames@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Jeff Krupka <Jeff_Krupka@fws.gov>, Karl Halupka <Karl_Halupka@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Seth Willey <seth_willey@fws.gov>

Hello.

Attached please find our DRAFT project plan for Canada lynx. We are requesting your review of the draft document with any suggested revisions or comments by April 24 COB.

The Project Plan discusses our intention to apply the Species Status Assessment (SSA) framework and complete an SSA report to inform and streamline the five-year review for the lynx DPS as well as subsequent recovery plan and future listing rules as needed based on the SSA and five-year review.

The Project Plan also specifically identifies the level of involvement that we are requesting from each involved office. Committed participation and assistance from the other regions and field offices within the DPS range will be essential to completing the tasks outlined in the draft plan particularly given the broad geographic distribution of the DPS, the differing management and conservation issues facing the various subpopulations, and the need to coordinate with States, Tribes, other Federal agencies, and our counterparts in southern Canada,

Please review the attached draft and provide Jim Zelenak with your comments/concerns no later than April 24. If you require additional time for your review, please contact us to discuss this.

Thank you for your time. JB

As an aside, if anyone is interested in attending the SSA workshop April 29-30 in Denver please contact Jim Zelenak. This is pretty short notice, but knowledgeable staff

may find it worthwhile.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Martin Miller, Chief, Division of Endangered Species, Northeast Region, U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035, 413-253-8615

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

From: [McDowell, Tom](#)
To: [Jim Zelenak](#)
Cc: [Jodi Bush](#); [Eric Rickerson](#); [Jessica Gonzales](#); [Russ MacRae](#); [Sarah Hall](#)
Subject: Feedback on Lynx Project Plan
Date: Friday, April 24, 2015 10:47:11 AM

Jim,

Thanks for the opportunity to provide feedback on the Lynx Project Plan. Our team feels the plan is sound and support the outlined process.

I would like to request a few minor changes to the document.

Please change the signature page to so there is one signature from the "Washington Field Office." Currently it has places for signatures from each of our sub-offices.

Additionally, please adjust the table to say "Washington" rather than "Wenatchee" in the list of both Project and Management Team rows and make any changes in the text that would follow from this adjustment in the table.

These changes are intended to reflect the management flexibility we will retain in assigning this work among our teams in Wenatchee, Spokane, or Lacey.

Thanks so Much,

Tom

Thomas L. McDowell
Deputy State Supervisor, Washington Fish and Wildlife Office
U.S. Fish and Wildlife Service
510 Desmond Dr. SE, Suite 102
Lacey, WA 98503
Office: 360-753-4652
Cell: 360-951-3756

From: [Zelenak, Jim](#)
To: [McCollough, Mark](#)
Subject: Re: Friends of lynx critical habitat?
Date: Friday, April 24, 2015 3:35:21 PM

Thanks Mark.

I will be sending you some relatively new lit I've been compiling for the SSA and onward; specific to your part of the boreal realm....

Have a great weekend (take some bamboo out fishing..... I hope to!).

On Fri, Apr 24, 2015 at 1:30 PM, McCollough, Mark <mark_mccollough@fws.gov> wrote:

Thanks Jim.

Please keep this under wraps as it is not official yet...

We met with the MDIFW this afternoon to discuss the next steps with their trapping HCP. As you may recall, 2 lynx were killed in conibear traps on leaning pole sets last fall, leaving only one permitted lethal take for the next 15 years.

Based on the evidence that lynx climb leaning poles, MDIFW will propose regulations that would require exclusion devices for all upland conibear traps in lynx areas (except blind sets). Also, based on their experience with injuries to lynx in foothold traps, MDIFW will propose regulations requiring that there be three swivels on the chains for all foothold traps and that the area be cleared of all debris within the diameter of the staked chains.

MDIFW had questions about the SSA, 5-year review, and recovery plan. They want to be involved. Fortunately, Laury had a copy of the draft memo from Jody Bush concerning the sequence of events over the next few months. We did not share the draft memo with MDIFW, but did let them know there would be opportunities for their involvement when we do the workshops in May and June. They wanted a list of all of the states within the lynx DPS. Perhaps (not certain?) they may contact other state wildlife agencies?

Have a good weekend.

Mark

On Fri, Apr 24, 2015 at 3:05 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Washington State Snowmobile Association, which sued us and won on economics for 2009 CH, has teamed up with the American Petroleum Institute (API) to help us defend the 2014 designation against WildEarth Guardians et al. They requested permission to file an amicus brief which we/DOJ did not oppose, and the court granted.

Odd.

Let me know if you'd like a copy of the court order granting it.

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office

585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [McCollough, Mark](#)
To: [Zelenak, Jim](#)
Subject: Re: Lynx SSA, 5-YR & Recovery Plan Contacts
Date: Monday, May 18, 2015 2:04:48 PM

Jim: Maine contacts look good.

USFS contact for ME and NH (White Mountain NF) is Leighlan Prout.

NH academic contact is John and Marian Litvaitis who have done lynx and bobcat habitat modeling and snowshoe hare research.

NH furbearer biologist is Patrick Tate. NH nongame biologist that is lead on lynx is Jill Killborn. Will Staats is the biologist in northern NH where lynx occur and is very knowledgeable.

Quebec furbearer biologist who would know about southern Quebec (Gaspé) populations would be Serge Larivière. Furbearer biologist in New Brunswick is Cade Libby.

Anything else????????? Mark

On Fri, May 15, 2015 at 5:41 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi All,

Please add or correct (in Track Changes) the entries in the attached table for your area and send back to me.

Trying to identify folks who will need to be involved in the lynx DPS status assessment and who can best help us understand current and future status/trends of lynx and habitats within each of the DPS subpopulations, the adequacy of current regulatory mechanisms, current/future threats and their potential magnitudes, lynx status/trends/management on the Canadian side of the border, etc.

Let me know if you have questions.

thanks,

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist

Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [Zelenak, Jim](#)
To: [Mark McCollough](#); [Anthony Tur](#); [Tamara Smith](#); [Bryon Holt](#); [Jeff Krupka](#); [Eric Hein](#); [Michelle Eames](#); [Leslie Ellwood](#); [Ann Belleman](#); [Kurt Broderdorp](#); [Kate Novak](#); [Lisa Solberg Schwab](#)
Cc: [Jodi Bush](#); [Seth Willey](#); [Mary Parkin](#)
Subject: Re: Lynx SSA, 5-YR & Recovery Plan Contacts
Date: Tuesday, May 19, 2015 10:00:00 AM

To clarify, I need each of you to fill in as many of the columns as you can for your state/area.

Also, the draft project plan indicated a call/webinar for May 20 - tomorrow. That is not happening, but I will let you all know as soon as it is scheduled, hopefully soon.

Thanks,

Jim

On Fri, May 15, 2015 at 3:41 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi All,

Please add or correct (in Track Changes) the entries in the attached table for your area and send back to me.

Trying to identify folks who will need to be involved in the lynx DPS status assessment and who can best help us understand current and future status/trends of lynx and habitats within each of the DPS subpopulations, the adequacy of current regulatory mechanisms, current/future threats and their potential magnitudes, lynx status/trends/management on the Canadian side of the border, etc.

Let me know if you have questions.

thanks,

Jim

--
Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--
Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Zelenak, Jim](#)
To: [Mark McCollough](#); [Tamara Smith](#); [Bryon Holt](#); [Kurt Broderdorp](#)
Subject: Fwd: Lynx population numbers
Date: Wednesday, June 03, 2015 9:41:07 AM

Thought you all might be interested in this short chain - maybe something else to discuss on our first SSA Project Team call next week. I also welcome your thoughts via "reply all" to this message.

Apparently, I am incapable of a "short answer" ;-)

Jim

----- Forwarded message -----

From: **Zelenak, Jim** <jim_zelenak@fws.gov>
Date: Tue, May 26, 2015 at 11:53 AM
Subject: Re: Lynx population numbers
To: "Nordstrom, Lori" <lori_nordstrom@fws.gov>
Cc: Grace Matelich <grace@adventureandscience.org>

Hi Grace,

The short answer is that we do not have any accurate, reliable estimates for the number of Canada (not "Canadian") lynx currently or historically in the Lower 48 states. This is because (1) lynx are very difficult to survey, (2) their numbers naturally change quite a bit over time in response to changes in the abundance of snowshoe hares, their primary prey, and (3) historically (and perhaps currently), the Lower 48 received waves of immigrating lynx from Canada roughly every 8-11 years when hare populations in southern Canada crashed, resulting in large numbers of lynx being trapped (prior to trapping prohibitions now in place) during those years, often in places that we now believe cannot (and likely never could) support resident, breeding lynx populations.

Besides those places where lynx occasionally show up but do not persist (most likely the case with the Uintas - where there are a few verified historic records of lynx but no indication that a persistent breeding population ever occurred there), there are 5 known natural resident breeding populations of lynx in the Lower 48. We believe these act as subpopulations of the larger lynx population in Canada, and that they may rely on immigration/dispersal of lynx from Canada to maintain demographic and genetic viability.

These Lower 48 lynx subpopulations occur in (1) northern Maine, (2) northeastern Minnesota, (3) northwestern Montana and into northeastern Idaho, (4) north central Washington, and (5) the Greater Yellowstone Area of southwestern Montana and northwestern Wyoming. There is also an introduced population of lynx in western Colorado.

Although we lack reliable estimates of lynx numbers in each of these, based on what we know of lynx habitat, home range sizes, hare densities, and the distribution of bobcats (which tend to out-compete lynx except in areas that have deep and persistent snow conditions that favor lynx), it may be reasonable to think that the Lower 48 typically supports (and probably supported historically) somewhere between 500 and 1,500 resident lynx, and more than that, occasionally and temporarily, after irruptions of lynx from southern Canada into the Lower 48.

I hope this helps. Let me know if you have other questions or need additional information.

On Tue, May 26, 2015 at 6:51 AM, Nordstrom, Lori <lori_nordstrom@fws.gov> wrote:

Good morning

I moved on to a different job a number of years ago. Jim Zelenak in the USFWS office in Helena, Montana is now the lynx and wolverine coordinator. I've cc'd him here.

Lori

On Sat, May 23, 2015 at 12:03 PM, Grace Matelich <grace@adventureandscience.org> wrote:

Hi Lori,

I work for a small non-profit called Adventurers and Scientists for Conservation. We are launching a tracking project in the Uintas this summer (<http://www.adventurescience.org/uinta-carnivore-survey.html>), and as we start to get things going, I'm working on a research story about wolverine and lynx and their history of habitat. I have gotten a lot of great information so far, but I haven't been able to find any numbers for the Canadian Lynx population (and or capacity) in the US. Does this number exist, or is there not enough survey work currently to know?

Hope to hear back from you.

Very best,
grace

--

Grace Kay Matelich
Media Coordinator
Adventurers And Scientists For Conservation
914.924.0828 | www.adventurescience.org

--

Lori H. Nordstrom
Partners for Fish & Wildlife, Regional Coordinator
Refuge Supervisor, Area 4
U.S. Fish and Wildlife Service
5600 American Boulevard West, Suite 990
Bloomington, MN 55437-1458
P: 612.713.5475 C: 612.710.7583
F: 612.713.5287
Visit our website: Partners for Fish and Wildlife - Midwest Region

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Smith, Tamara](#)
To: [Jim Zelenak](#)
Cc: [Mark McCollough](#); [Bryon Holt](#); [Kurt Broderdorp](#)
Subject: Re: Welcome to Lynx SSA "Core" Team
Date: Monday, June 08, 2015 1:22:45 PM

Hi Jim -

Sorry for the late response - I was out of town last week and am just catching up on emails.

Tuesdays generally work the best for me - 10-11, 12-1, or 1-2 MT.

Wednesdays and Thursdays could also work, if those days are better for the group.

Thanks!

-Tam

On Wed, Jun 3, 2015 at 12:59 PM, Kurt Broderdorp <Kurt_Broderdorp@fws.gov> wrote:

Tuesdays are generally going to work better for me, and the 10-11 likely is better for me.

Kurt Broderdorp

US Fish and Wildlife Service

(970) 628-7186

From: Zelenak, Jim [mailto:jim_zelenak@fws.gov]
Sent: Tuesday, June 02, 2015 3:29 PM
To: Mark McCollough; Tamara Smith; Bryon Holt; Kurt Broderdorp
Subject: Re: Welcome to Lynx SSA "Core" Team

Forgot to attach the project plan. Here it is.

On Tue, Jun 2, 2015 at 3:21 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi All:

I'm guessing most of you have by now learned the troubling news that you've been

nominated for and designated to the lynx SSA Project Team. Congratulations!

This is going to be fun, right?

I anticipate that we will generally divide duties geographically like this:

Jim Z - MT and WY

Kurt B - CO (and UT and NM)

Bryon H - ID and WA (and OR)

Tam S - MN (and MI and WI)

Mark M - ME (and NH and VT)

For starters, we need to schedule biweekly calls, starting next week, and the 2nd and 4th week of each month thereafter. So we avoid holidays and long weekends, I would prefer either the 2nd **AND** 4th Tues. or Wed. or Thurs. of each month. Once we settle on a day, we need to schedule the calls between 10 AM and 1 PM Mountain Time to comfortably accommodate all four time zones.

Please let me know your preference for day (TU, W, or TH) and 1-hour (they won't always take that long) time slot (10-11, 11-12, 12-1, or 1-2 Mountain Time). Once I have your preferences, I will pick a day and time that works best for most. Please let me know if you have any "absolutely not" days/times, too. I will separately schedule the monthly general coordination calls that will include the larger group of Service lynx biologists and managers.

I'd also like you to familiarize yourselves with the SSA framework if you haven't done so already. I've attached the most recent (Jan. 2015) framework document, and here is the Service's Google site:

<https://sites.google.com/a/fws.gov/ssa/?pli=1>

I've also attached the "SSA Cardinal Questions" table and ask that each of you spend some time with those questions and jot down info specific to the DPS subpopulation in your neck

of the woods to the extent that you can before our first call next week. Don't worry about answering every item or providing all the sources, but the more complete the better, with a focus on the major drivers of DPS persistence/viability. I hurriedly filled out most of the table as a short-notice assignment before the SSA workshop in Denver last month and will share that with you-all, but I'd first like to get your thoughts free of my biases.

I've also attached the current (hopefully final, though not yet signed) version of the project plan, and the current list of contacts - could those of you who have not yet filled in contacts for your states do so? Thanks.

Also, if you haven't done so recently, please re-familiarize yourself with the pertinent Federal Register listing and critical habitat documents, found here:

<http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A073>

Our task is to use the SSA framework to complete a structured and transparent threats assessment for the DPS that can be used for all ESA-related decisions/documents. In this case we are trying to determine: (1) the extent to which the threat for which the DPS was listed (inadequacy of regulatory mechanisms, Factor D) has or has not been addressed; (2) whether there are new threats (e.g., climate change) that indicate the DPS continues to warrant protection under the Act; (3) the future viability of the DPS; and (4) what a recovered DPS would look like.

On a final note, you'll notice that the belated management decision that we need to complete an SSA report prior to a 5-year review and/or recovery plan means that our previous news release and interested party letter indicating that we would complete a 5-year review by this month is moot. We are now shooting for completing the SSA by the end of this calendar year, and there are still ongoing discussions about whether we will do a 5-year review or just move right into recovery planning (we have a court order for the latter but not for the former). Because of the tight schedule for the SSA and court-ordered recovery plan, we will have to focus on those factors that we believe are most likely to drive the status and viability of each of the DPS subpopulations (i.e., we won't have time to sweat the small stuff).

I suppose that's enough to think about for one email, but I look forward to talking with all of you and hope doing so will help clear some of this up in my head. Sorry that you've gotten roped into this with me, but I'm very glad to have your knowledge, expertise, and good cheer along for the ride. Thank you.

Cheers,

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East

Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

From: [Jim Zelenak \(via Google Drive\)](#)
To: mark_mccollough@fws.gov
Cc: tamara_smith@fws.gov; bryon_holt@fws.gov; kurt_broderdorp@fws.gov
Subject: Lynx SSA - Invitation to collaborate
Date: Thursday, June 11, 2015 11:27:04 AM

[jim_zelenak@fws.gov](#) has invited you to **contribute** to the following shared folder:

 [Lynx SSA](#)

 Google Drive Lynx SSA site for Core Team members.

[Open](#)

Google Drive: Have all your files within reach from any device.



From: [McCollough, Mark](#)
To: [Zelenak, Jim](#)
Subject: Re: Lynx SSA and Google Drive
Date: Thursday, June 18, 2015 10:59:18 AM

Jim: I will do more work on the Cardinal Questions document. I will also put in a placeholder for 3 days travel, just in case. Mark

On Wed, Jun 17, 2015 at 5:23 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hope you got a little R&R, Mark.

Hard to predict about travel. We are talking about a single, 2-to-3-day expert elicitation meeting in a place most convenient for the experts we select (which will depend on how we narrow/prioritize our questions and modeling needs). Not sure where that will be, or when exactly, though we are hoping to get both figured out relatively quickly.

I didn't take minutes of the first call, don't think Mary did either. It was largely a listening session to see how others felt about the SSA process, etc. Seems everyone is pretty new to SSA - more questions than answers.

We talked about our need to identify our most critical information needs as we try to assess/determine the current status and evaluate future viability of the DPS subpopulations.

No new homework, although if you can fill in more of the blanks on the Cardinal Questions table, that would be good. Mine somewhat hurried responses are posted on the google drive site now, so feel free to take a look and let me know what I've missed.

I'll put together a rough agenda for next week soon.

Cheers!

Jim

On Wed, Jun 17, 2015 at 2:16 PM, McCollough, Mark <mark_mccollough@fws.gov> wrote:

Thanks Jim. I am new to Google Docs as well. I had my first exposure in the last two weeks using it to move files to our RO for the admin record for the trapping lawsuit. It seems the use of Google Docs is increasing in our region, so a workshop would be welcome.

I am back from A/L and here for most of the summer.

Laury asked if there was any travel expected with our work? We have funding for travel, but are trying to develop a budget through the end of the fiscal year. Do you anticipate any need for us to travel to MT or elsewhere?

Finally, I have been busy trying to get some must-do items off my desk after being gone a week. However, remind me...were there minutes from last week's lynx meeting that I could catch up on? Homework assignments?

Thanks, Mark

On Wed, Jun 17, 2015 at 11:22 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi Team!

On Monday, Mary and I got a crash course in using google drive, editing docs, etc., from Tara Nicolaysen. We are going to see if we can line Tara up for a similar primer on our next Core Team call. I understand several of you have been on the site and encountered issues with saving/editing docs. With a little guidance and practice, I think (and hope) that working on google drive will increase both collaboration and efficiency.

I will soon be moving a few other things to the site and organizing/creating folders in a way that I hope makes sense. I'll also try to get a google invitation to the biweekly meetings out so that those will show up automatically on your calendars.

In the mean time, I'm working on a letter to our State partners that was spurred by a letter from AFWA to Gary Frazer. Gary and Noreen Walsh (R6 RD) are both interested in seeing that we coordinate well with our State partners throughout the SSA and recovery planning processes and that we document such coordination for the AR.

I'm also working on a matrix that I hope will help us identify our most pressing information and modeling needs and the experts who can most help in those areas. Like the "contacts" matrix, i will be sending that around to each of you to have your input on prioritizing info needs and experts from your part of the DPS.

Finally - I hope to get back to and complete a summary document of the most pertinent Federal Register docs and others, e.g., settlement agreements, etc. so that we are all working from the same listing historical perspective.

I will try to gin up a brief agenda for our next call prior to Tues.

Let me know if you have questions or concerns.

Cheers!

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [Smith, Tamara](#)
To: [Zelenak, Jim](#)
Cc: [Mark McCollough](#); [Bryon Holt](#); [Kurt Broderdorp](#); [Mary Parkin](#)
Subject: Re: Lynx SSA and Google Drive
Date: Thursday, June 18, 2015 3:20:33 PM

Thanks, Jim!

Can you remind us of the "to do" items from last week's call? I am working remotely today and forgot to grab my notes.

Thanks!
-Tam

On Wed, Jun 17, 2015 at 10:22 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi Team!

On Monday, Mary and I got a crash course in using google drive, editing docs, etc., from Tara Nicolaysen. We are going to see if we can line Tara up for a similar primer on our next Core Team call. I understand several of you have been on the site and encountered issues with saving/editing docs. With a little guidance and practice, I think (and hope) that working on google drive will increase both collaboration and efficiency.

I will soon be moving a few other things to the site and organizing/creating folders in a way that I hope makes sense. I'll also try to get a google invitation to the biweekly meetings out so that those will show up automatically on your calendars.

In the mean time, I'm working on a letter to our State partners that was spurred by a letter from AFWA to Gary Frazer. Gary and Noreen Walsh (R6 RD) are both interested in seeing that we coordinate well with our State partners throughout the SSA and recovery planning processes and that we document such coordination for the AR.

I'm also working on a matrix that I hope will help us identify our most pressing information and modeling needs and the experts who can most help in those areas. Like the "contacts" matrix, i will be sending that around to each of you to have your input on prioritizing info needs and experts from your part of the DPS.

Finally - I hope to get back to and complete a summary document of the most pertinent Federal Register docs and others, e.g., settlement agreements, etc. so that we are all working from the same listing historical perspective.

I will try to gin up a brief agenda for our next call prior to Tues.

Let me know if you have questions or concerns.

Cheers!

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601

(406) 449-5225 ext. 220

jim_zelenak@fws.gov

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East
Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

From: [Parkin, Mary](#)
To: [Zelenak, Jim](#)
Subject: Re: Draft Letter to States - Lynx SSA
Date: Monday, June 22, 2015 10:51:33 AM

Drat! I apparently didn't save my edits, so I just re-did. Sorry about that, and talk soon,
Mary

On Mon, Jun 22, 2015 at 10:54 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi Mary,

I'm not seeing the attachment. Can you re-send it?

On Fri, Jun 19, 2015 at 12:22 PM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi all,

Thanks for the opportunity to review, Jim, and the letter looks great to me.

In the attached I've noted a few typos and provided one comment. Re: my comment, as we bring partners into the SSA, we need to be clear that while we're drawing a distinction between scientific analysis and policy direction, both inform decisions. Although it's not a big deal for the purposes of this letter, if you haven't already sent it, perhaps the sentence could be reworded to say something like "science is separate from policy, and both play a fundamental role in lynx decision making").

Have a great weekend,
Mary

On Fri, Jun 19, 2015 at 12:14 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Jodi,

As you requested, I've drafted a brief letter to Montana FWP to notify them of the change in process and schedule for the lynx status assessment. Once this is reviewed/finalized, we can share it with other state ES offices in the DPS range so they can edit, along with notifying them that we expect each ES office to send it to their state management agency.

I've also attached the 2-page SSA fact sheet that would be enclosed with the letter and has been cleared for distribution outside the FWS (right Heather?).

I've copied Seth, Mary, and Heather and request their review also with regard to SSA process and recovery planning language.

Let me know if you think we also need to draft a letter in response to the AFWA letter to Gary F. and, if so, for whose signature (Gary's?)?

Also let me know if you want the track changes version of the attached letter (based on our "Interested Party" letter from Dec.).

Heather and Mary - you both provided excellent thoughts in your emails of June 15-16, but I think that level of detail might be too much for this introductory letter to the States. Maybe we can include that discussion during the first of the monthly coordination calls we will have with States?

Thanks,

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

From: [Bush, Jodi](#)
To: [Zelenak, Jim](#)
Subject: Re: Draft Letter to States - Lynx SSA
Date: Monday, June 22, 2015 3:00:04 PM

I'll await your revised version. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Fri, Jun 19, 2015 at 10:14 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Jodi,

As you requested, I've drafted a brief letter to Montana FWP to notify them of the change in process and schedule for the lynx status assessment. Once this is reviewed/finalized, we can share it with other state ES offices in the DPS range so they can edit, along with notifying them that we expect each ES office to send it to their state management agency.

I've also attached the 2-page SSA fact sheet that would be enclosed with the letter and has been cleared for distribution outside the FWS (right Heather?).

I've copied Seth, Mary, and Heather and request their review also with regard to SSA process and recovery planning language.

Let me know if you think we also need to draft a letter in response to the AFWA letter to Gary F. and, if so, for whose signature (Gary's?)?

Also let me know if you want the track changes version of the attached letter (based on our "Interested Party" letter from Dec.).

Heather and Mary - you both provided excellent thoughts in your emails of June 15-16, but I think that level of detail might be too much for this introductory letter to the States. Maybe we can include that discussion during the first of the monthly coordination calls we will have with States?

Thanks,

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Smith, Tamara](#)
To: [Zelenak, Jim](#)
Subject: Re: question about experts
Date: Wednesday, June 24, 2015 9:29:26 AM

Okay, thanks Jim. I will keep any contact to a minimum, if anything at all. Definitely won't invite anyone to participate, etc. Thanks!

On Wed, Jun 24, 2015 at 9:18 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Heather and Mary expressed some concerns about reaching out too early (before the core team has landed on a prioritized list of the most needed expertise and most likely candidates for providing it), but I think reaching out informally is OK as long as you don't imply and invitation. Hopefully we will very soon have our list of folks so we can begin reaching out more formally.

On Wed, Jun 24, 2015 at 8:13 AM, Smith, Tamara <tamara_smith@fws.gov> wrote:

Hi Jim - Is it okay to informally contact potential persons that we may potentially engage in the expert elicitation for the SSA? I am trying to narrow down the most appropriate people but want to make sure they would be a good fit. I was thinking of just asking a few people about their area of expertise generally and not mention the SSA. If not, that's okay, I'm looking at websites, literature, etc. also.

Thanks,
Tam

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East
Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East

Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

From: [Hall, Sarah](#)
To: [Zelenak, Jim](#)
Subject: Re: Lynx Docs
Date: Wednesday, June 24, 2015 1:12:27 PM

Thanks so much, Jim!

PS, Kit says Hello.

Sarah Hall
Endangered Species Recovery Program Manager
USFWS Pacific Region

On Wed, Jun 24, 2015 at 12:01 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Good talking with you both. Hope these help. I included some sec 6 stuff from Colorado (though I didn't look it over for relevance).

Let me know if you have questions or need anything else.

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Zelenak, Jim](#)
To: [Bryon Holt](#); [Kurt Broderdorp](#)
Subject: Cardinal Questions
Date: Thursday, June 25, 2015 2:44:14 PM

When you add to the Cardinal Questions document on the lynx SSA google drive - please do so on the same one in which Mark and Tam have entered their edits/comments. I will look at the other drive doc and see if it can be deleted - think it had some comments/examples from heather.

Thanks.

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Parkin, Mary](#)
To: [Jim Zelenak](#); [Heather Bell](#)
Subject: Today's lynx SSA coord call
Date: Monday, June 29, 2015 7:34:33 AM

Hi both,

Our ARD has set up a "special" and mandatory ES staff meeting from 1-3 ET today. As this directly conflicts with our weekly coordination call, I'm wondering if we could change either the time or day for this week only. If that's not workable, I'll catch up with you later!

Thanks,
Mary

--

*Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov*

From: [Zelenak, Jim](#)
To: [Sartorius, Shawn S -FS](#)
Subject: Snow modelers
Date: Monday, June 29, 2015 9:46:34 AM

Hey Shawn,

Who would be the best contact for potential expert elicitation on snow conditions and modeling for the N. Rockies and GYA? Who did you rely most heavily on for wolverine, and how applicable do you think the snow modeling for wolverine would apply to lynx?

Thanks.

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Bush, Jodi](#)
To: [Seth Willey](#)
Subject: Fwd: letter from AFWA T&E Species Policy committee on Canada Lynx
Date: Monday, June 29, 2015 10:28:47 AM

fyi

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

----- Forwarded message -----

From: Jonathan Mawdsley <jmawdsley@fishwildlife.org>
Date: Tue, Jun 16, 2015 at 1:19 PM
Subject: Re: letter from AFWA T&E Species Policy committee on Canada Lynx
To: "Thabault, Michael" <michael_thabault@fws.gov>
Cc: "Frazer, Gary" <gary_frazer@fws.gov>, Jen Mock Schaeffer <JenMock@fishwildlife.org>, "Hagener, Jeff" <JHagener@mt.gov>, Mark Humpert <MHumpert@fishwildlife.org>, "Wiley, Nick" <Nick.Wiley@myfwc.com>, Jodi Bush <jodi_bush@fws.gov>

Mike,

Many thanks for the note - I look forward to talking with you and Jodi soon!

All the best,

Jonathan

From: Thabault, Michael <michael_thabault@fws.gov>
Sent: Tuesday, June 16, 2015 2:21 PM
To: Jonathan Mawdsley
Cc: Frazer, Gary; Jen Mock Schaeffer; Hagener, Jeff; Mark Humpert; Wiley, Nick; Jodi Bush
Subject: Re: letter from AFWA T&E Species Policy committee on Canada Lynx

Jonathan, My apologies for the delay in response. I have been out of the country and am just getting caught up. Jodi and I are getting together today to talk about the path forward. One or both of us will touch bases with you shortly on where we are headed. Rest assured we see

a meaningful role for the lynx range states in the process. Standby.

Mike

Michael Thabault
Assistant Regional Director
Ecological Services
U.S. Fish and Wildlife Service
Mountain Prairie Region
303-236-4210
michael_thabault@fws.gov

On Mon, Jun 8, 2015 at 7:23 AM, Jonathan Mawdsley <jmawdsley@fishwildlife.org> wrote:

Dear Gary,

Many thanks for the note - this is all excellent news and we are looking forward to following up with Michael and Jodi on the subject of lynx recovery planning. Michael and Jodi, might there be a time in the next few weeks when we could discuss the next steps in recovery planning for the species and possible roles for AFWA in helping to facilitate coordination across the state efforts?

With best regards,

Jonathan Mawdsley

Jonathan R. Mawdsley, Ph.D.

Fish and Wildlife Science Coordinator

Association of Fish and Wildlife Agencies

1100 First Street, NE, Suite 825

Washington, DC 20002 USA

Phone: (202) 838-3462

Cell: (202) 997-6628

Fax: (202) 350-9869

E-mail: jmawdsley@fishwildlife.org

Web: <http://www.fishwildlife.org>

From: Frazer, Gary [mailto:gary_frazer@fws.gov]
Sent: Saturday, June 06, 2015 2:31 AM
To: Jonathan Mawdsley
Cc: Jen Mock Schaeffer; Hagener, Jeff; Mark Humpert; Wiley, Nick; Michael Thabault; Jodi Bush
Subject: Re: letter from AFWA T&E Species Policy committee on Canada Lynx

Jonathan/Nick -- I discussed your letter this week with Assistant Regional Director Mike Thabault and MT Ecological Services Project Leader Jodi Bush, whose office has the lead for lynx.

Their plan now is to proceed with a species status assessment for Canada lynx, which will inform a recovery plan revision. That status assessment and recovery plan revision will then serve to satisfy our 5 year review obligation.

We definitely welcome state involvement in this process. I understand that Jodi sent a letter to the State fish and wildlife agencies of the lynx range states last fall to that effect, and I believe she said that she's planning to follow up with an update.

I would suggest you contact Jodi directly to confirm the process steps and timeline they have in mind and to discuss how you might be able to facilitate coordination between the Service and the interested States. Her email is Jodi_Bush@fws.gov. I'm on a plane now and don't have her phone number handy, but you can find it by going to the Region 6 web page and searching for the MT ES Field Office.

Thanks for your willingness to help us in this endeavor. -- GDF

On Tuesday, June 2, 2015, Jonathan Mawdsley <jmawdsley@fishwildlife.org> wrote:

Dear Gary,

I trust that this message finds you well. As discussed at the meeting of the AFWA Threatened and Endangered Species Policy Committee earlier this year, the fish and wildlife agencies in the range states for the Canada Lynx have expressed a strong desire to be fully engaged in the status review for this species. Attached is a letter from AFWA Threatened and Endangered Species Policy Committee Chair Nick Wiley expressing this interest.

Many thanks in advance for your efforts to involve the state fish and wildlife agencies in the status review activities for Canada Lynx. If there is anything that I or others at AFWA can do to be of any assistance in helping to advance the review process, please do not hesitate to contact me.

With best regards,

Jonathan Mawdsley

Jonathan R. Mawdsley, Ph.D.

Fish and Wildlife Science Coordinator

Association of Fish and Wildlife Agencies

1100 First Street, NE, Suite 825

Washington, DC 20002 USA

Phone: (202) 838-3462

Cell: (202) 997-6628

Fax: (202) 350-9869

E-mail: jmawdsley@fishwildlife.org

Web: <http://www.fishwildlife.org>

--

Gary Frazer

Assistant Director -- Ecological Services

U.S. Fish and Wildlife Service

(202) 208-4646

From: [Zelenak, Jim](#)
To: [Heather Bell](#)
Cc: [Mary Parkin](#)
Subject: Drafts for Science Applications and Conservation Genetics Teams
Date: Monday, June 29, 2015 3:39:26 PM

For Both:

"Dear XXXX,

The Service's Montana Field Office, with assistance from Regions 1, 2, 3, and 5, and the Species Status Assessment (SSA) Framework Implementation Team, is applying the SSA framework to the contiguous US DPS of the Canada lynx. The SSA is intended to result in a scientifically sound and structured status, threats, and viability assessment for the DPS, and to inform a court-ordered recovery plan as well as other future decision documents required under the ESA."

1. Science Applications:

"Because the lynx is a boreal forest species reliant on snowshoe hares for food and persistent snow to out-compete other hare predators, we need to evaluate the potential effects of climate change on lynx populations within the DPS. We request your help in identifying resources and experts who might best inform our evaluation of how climate warming may impact boreal forest habitats, including the size, intensity, and periodicity of forest fires and insect outbreaks, as well as snowshoe hare populations and abundances, and the distribution and persistence snow conditions favorable to lynx."

2. Conservation Genetics:

"Because lynx within the DPS are at the southern extent of their range, as well as the ranges of boreal forest and snowshoe hares, where the potential for and consequences of genetic constraints may be amplified, we need to evaluate the current and likely future genetic health of lynx populations within the DPS. We request your help in reviewing, interpreting, and summarizing the available genetics literature and data, and identifying resources and experts who might best inform our evaluation of the likelihood and consequences of potential genetic issues that could effect the viability of lynx populations in the Lower 48 (and also southern Canada, which may act as a source for lynx populations within the DPS).

For Both:

"Please let me know your availability to discuss these topics in more detail soon." ???

Not sure how you might like to close or or set-up the "what happens next part of this, Heather, but think I will leave that up to you... =).

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Parkin, Mary](#)
To: [Bush, Jodi](#)
Subject: Re: Consistent State Coordination Message - Lynx SSA
Date: Wednesday, July 01, 2015 9:18:38 AM

Hi Jodi,

I'm working on them and will have them to you before I leave the office at noonish (MT) today. I'll be sending them to Heather and the FIT for further vetting, so please consider them "interim" for now.

Cheers,
Mary

On Wed, Jul 1, 2015 at 10:41 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Mary. Do you have those points pulled together yet? I'd like to get the state letters out today. Thanks JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Mon, Jun 29, 2015 at 10:01 PM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Sounds good, Jim. I'll (hopefully) get the draft talking points off my desk tomorrow, or at the very latest, Wednesday before I head out on annual leave.

Cheers,
Mary

On Mon, Jun 29, 2015 at 5:09 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi Mary,

Jodi thinks it would be a good idea to forward the bullets/talking points that you are working on for ARDs along with the template letter to states that we are finalizing here and hope to send out soon to ARDs and ES offices within the DPS range.

Could you please copy Jodi on those when you send them around?

Thanks,

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office

585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

From: Mackey, Dennis
To: [Conard, Ben](#)
Cc: [Kim Garner](#); [Bryon Holt](#)
Subject: Re: Lynx SSA
Date: Wednesday, July 01, 2015 9:45:42 AM

Okay. That's fine. I'll relay to Tom so he knows and can plan.

Thanks.

Dennis

On Wed, Jul 1, 2015 at 9:42 AM, Conard, Ben <ben_conard@fws.gov> wrote:

We agreed for Bryon to be the POC and coordinator for R1 participation. He'll need input (data) from WA, and OR but will consolidate info and represent R1. He cannot be expected to do all the work for the Region when he does not know the individual habitats in places he does not live. - Ben

On Wed, Jul 1, 2015 at 8:39 AM, Mackey, Dennis <dennis_mackey@fws.gov> wrote:

I talked with Tom McDowell in Lacey today. Russ M had mentioned to Tom that Bryon may be able to cover the lynx SSA work for Washington.

Not sure where this is at. Have we agreed to that? I'm fine if that is what you all want to do, I'm just wondering, and Tom wants to make sure because if that is not the case they need to figure out who will do the work at WFWO.

Thanks.

Dennis

--

Dennis Mackey
Deputy State Supervisor
U.S. Fish and Wildlife Service
Boise, Idaho
Office: 208-378-5267
Cell: 208-860-1970

--

Ben Conard, Field Supervisor
U.S. Fish and Wildlife Service
Northern Idaho Field Office
11103 E. Montgomery Drive
Spokane Valley, WA 99206
Phone: (509) 893-8030
Fax: (509) 891-6748

--

Dennis Mackey
Deputy State Supervisor
U.S. Fish and Wildlife Service
Boise, Idaho
Office: 208-378-5267
Cell: 208-860-1970

From: Mackey, Dennis
To: [Tom McDowell](mailto:Tom.McDowell)
Subject: Fwd: Lynx SSA
Date: Wednesday, July 01, 2015 9:46:49 AM

Hi Tom:

See below. So it sounds like Bryon can lead but will need some misc support. Does that work for you guys? Thanks.

Dennis

----- Forwarded message -----

From: **Conard, Ben** <ben_conard@fws.gov>
Date: Wed, Jul 1, 2015 at 9:42 AM
Subject: Re: Lynx SSA
To: "Mackey, Dennis" <dennis_mackey@fws.gov>
Cc: Kim Garner <kim_garner@fws.gov>, Bryon Holt <bryon_holt@fws.gov>

We agreed for Bryon to be the POC and coordinator for R1 participation. He'll need input (data) from WA, and OR but will consolidate info and represent R1. He cannot be expected to do all the work for the Region when he does not know the individual habitats in places he does not live. - Ben

On Wed, Jul 1, 2015 at 8:39 AM, Mackey, Dennis <dennis_mackey@fws.gov> wrote:

I talked with Tom McDowell in Lacey today. Russ M had mentioned to Tom that Bryon may be able to cover the lynx SSA work for Washington.

Not sure where this is at. Have we agreed to that? I'm fine if that is what you all want to do, I'm just wondering, and Tom wants to make sure because if that is not the case they need to figure out who will do the work at WFWO.

Thanks.

Dennis

--

Dennis Mackey
Deputy State Supervisor
U.S. Fish and Wildlife Service
Boise, Idaho
Office: 208-378-5267
Cell: 208-860-1970

--

Ben Conard, Field Supervisor
U.S. Fish and Wildlife Service
Northern Idaho Field Office
11103 E. Montgomery Drive
Spokane Valley, WA 99206
Phone: (509) 893-8030
Fax: (509) 891-6748

--

Dennis Mackey
Deputy State Supervisor
U.S. Fish and Wildlife Service
Boise, Idaho
Office: 208-378-5267
Cell: 208-860-1970

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FILE CODE

DATE, 2015

Dear **(Title)**:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director Hagener

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Montana. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact LOCAL NAME at (NUMBER) (EMAIL).

Sincerely,

NAME
TITLE

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathon Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ



U.S. Fish & Wildlife Service

The Species Status Assessment Framework

An Integrated Framework for Conservation

“The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday’s logic.”

– Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation’s species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species’ biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

“The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation.”

– Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

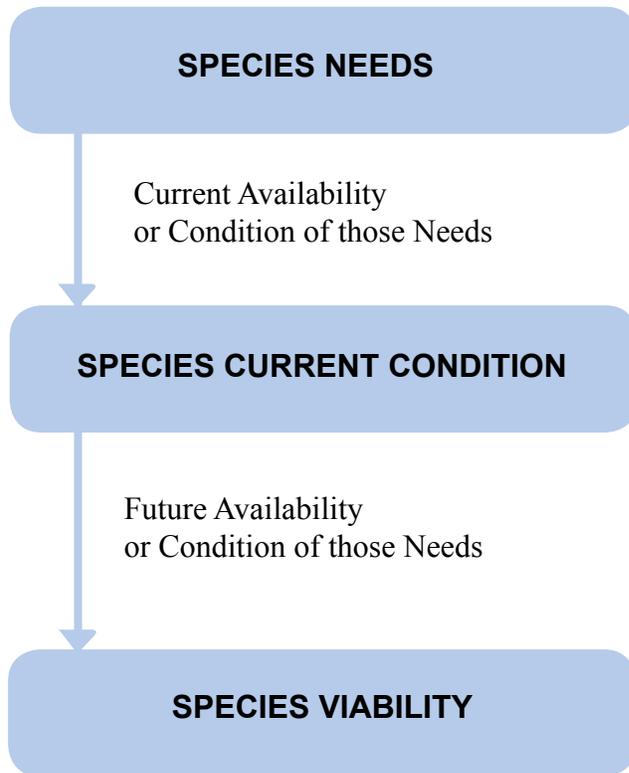
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

**U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171**

March 2014



Gunnison's prairie dog. Credit: USFWS

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FWS/R6/MTESO/Canada Lynx Status Assessment

July 1, 2015

Dear Director Hageners:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director Hagener

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Montana. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Jim Zelenak at (406) 449-5225, extension 220 (jim_zelenak@fws.gov).

Sincerely,



Jodi Bush
Field Office Supervisor

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathon Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ

From: Bush, Jodi
To: [Eric Rickerson](#); [Michael Carrier](#); [Mark Sattelberg](#); [Ann Timberman](#); [Drue DeBerry](#); [Laury Zicari](#); [Tom Chapman](#); [Wally Murphy](#); [Peter Fasbender](#)
Cc: [Jeff Krupka](#); [Bryon Holt](#); [Kurt Broderdorp](#); [Tamara Smith](#); [Ann Belleman](#); [Mark McCollough](#); [Jim Zelenak](#); [Anthony Tur](#); [Seth Willey](#); [Sarah Quamme](#); [Laura Ragan](#); [Krishna Gifford](#); [Eric Hein](#); [Sarah Hall](#); [Michael Thabault](#); [Lisa Mandell](#)
Subject: Updated State Coordination Letter
Date: Wednesday, July 01, 2015 11:00:43 AM
Attachments: [2015 06 25 LTR Bush Hagener Lynx SSA Letter to States.pdf](#)
[SSA Fact Sheet.pdf](#)
[2015 0701 TEMPLATE Lynx SSA Letter to States.docx](#)

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FILE CODE

DATE, 2015

Dear **(Title)**:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director Hagener

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Montana. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact LOCAL NAME at (NUMBER) (EMAIL).

Sincerely,

NAME
TITLE

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathon Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ



U.S. Fish & Wildlife Service

The Species Status Assessment Framework

An Integrated Framework for Conservation

“The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday’s logic.”

– Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation’s species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species’ biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

“The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation.”

– Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

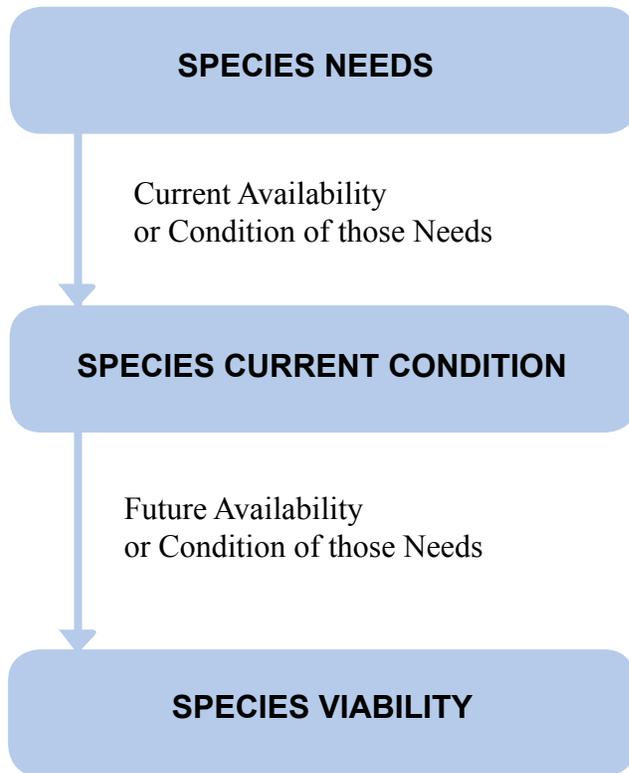
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

**U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171**

March 2014



Gunnison's prairie dog. Credit: USFWS

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FWS/R6/MTESO/Canada Lynx Status Assessment

July 1, 2015

Dear Director Hageners:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director Hagener

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Montana. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Jim Zelenak at (406) 449-5225, extension 220 (jim_zelenak@fws.gov).

Sincerely,



Jodi Bush
Field Office Supervisor

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathon Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ

From: Hall, Sarah
To: [Tom McDowell](#); [Dennis Mackey](#)
Cc: [Terry Rabot](#); [Kim Garner](#); [Jeffrey Chan](#)
Subject: Fwd: Updated State Coordination Letter
Date: Wednesday, July 01, 2015 11:06:12 AM
Attachments: [2015_06_25_LTR_Bush_Hagener_Lynx_SSA_Letter_to_States.pdf](#)
[SSA Fact Sheet.pdf](#)
[2015_0701_TEMPLATE_Lynx_SSA_Letter_to_States.docx](#)

FYI, let me know if you need any assistance.

Sarah Hall
Endangered Species Recovery Program Manager
USFWS Pacific Region

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
Date: Wed, Jul 1, 2015 at 10:00 AM
Subject: Updated State Coordination Letter
To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>
Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FILE CODE

DATE, 2015

Dear **(Title)**:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director Hagener

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Montana. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact LOCAL NAME at (NUMBER) (EMAIL).

Sincerely,

NAME
TITLE

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathon Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ



U.S. Fish & Wildlife Service

The Species Status Assessment Framework

An Integrated Framework for Conservation

“The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday’s logic.”

– Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation’s species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species’ biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

“The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation.”

– Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

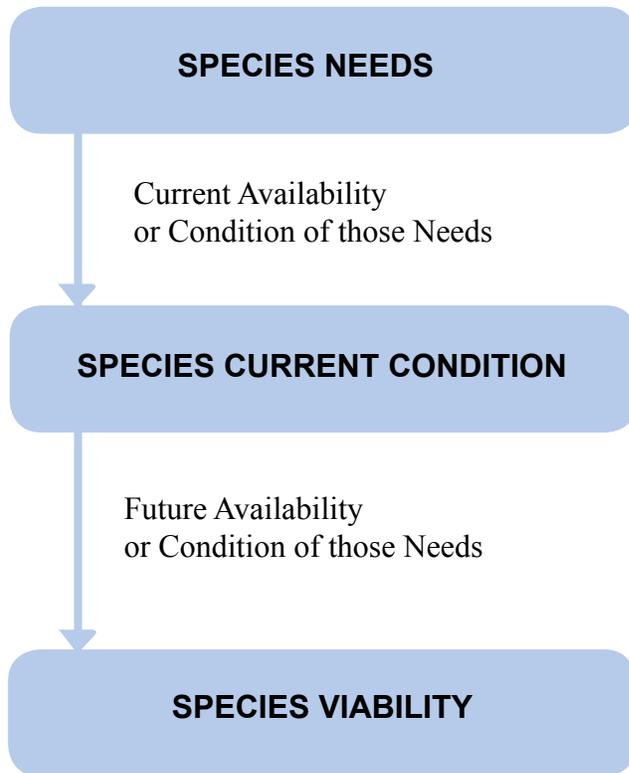
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

**U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171**

March 2014



Gunnison's prairie dog. Credit: USFWS

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FWS/R6/MTESO/Canada Lynx Status Assessment

July 1, 2015

Dear Director Hageners:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director Hagener

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Montana. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Jim Zelenak at (406) 449-5225, extension 220 (jim_zelenak@fws.gov).

Sincerely,



Jodi Bush
Field Office Supervisor

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathon Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ

From: Belleman, Ann
To: [Lisa Solberg Schwab](mailto:Lisa.Solberg.Schwab@fws.gov)
Cc: [Nathan Darnall](mailto:Nathan.Darnall@fws.gov); [Mark Sattelberg](mailto:Mark.Sattelberg@fws.gov)
Subject: Fwd: Updated State Coordination Letter
Date: Wednesday, July 01, 2015 12:19:12 PM
Attachments: [2015_06_25_LTR_Bush_Hagener_Lynx_SSA_Letter_to_States.pdf](#)
[SSA Fact Sheet.pdf](#)
[2015_0701_TEMPLATE_Lynx_SSA_Letter_to_States.docx](#)

Lisa - You're not on this email list but you may end up having to help with this (I did in the past). But maybe Mark will let you off the hook!

Ann Belleman
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Field Office Complex
4101 American Blvd. E
Bloomington, MN 55425-1665

ann_belleman@fws.gov

307-421-5839 (work cell)
(612) 725-3548 (Bloomington, MN)

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
Date: Wed, Jul 1, 2015 at 11:00 AM
Subject: Updated State Coordination Letter
To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>
Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

From: [Zelenak, Jim](#)
To: [Hall, Sarah](#)
Subject: Re: R1 ARD signature on lynx project plan
Date: Monday, July 06, 2015 7:48:22 AM

Thanks Sarah!

On Wed, Jul 1, 2015 at 2:59 PM, Hall, Sarah <sarah_hall@fws.gov> wrote:

Hi Jim,
Let me know if you need anything else.
Have a great weekend,
Sarah

Sarah Hall
Endangered Species Recovery Program Manager
USFWS Pacific Region

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FILE CODE

DATE, 2015

Dear **(Title)**:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director Hagener

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Montana. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact LOCAL NAME at (NUMBER) (EMAIL).

Sincerely,

NAME
TITLE

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathon Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ



The Species Status Assessment Framework

An Integrated Framework for Conservation

“The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday’s logic.”

– Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation’s species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species’ biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

“The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation.”

– Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

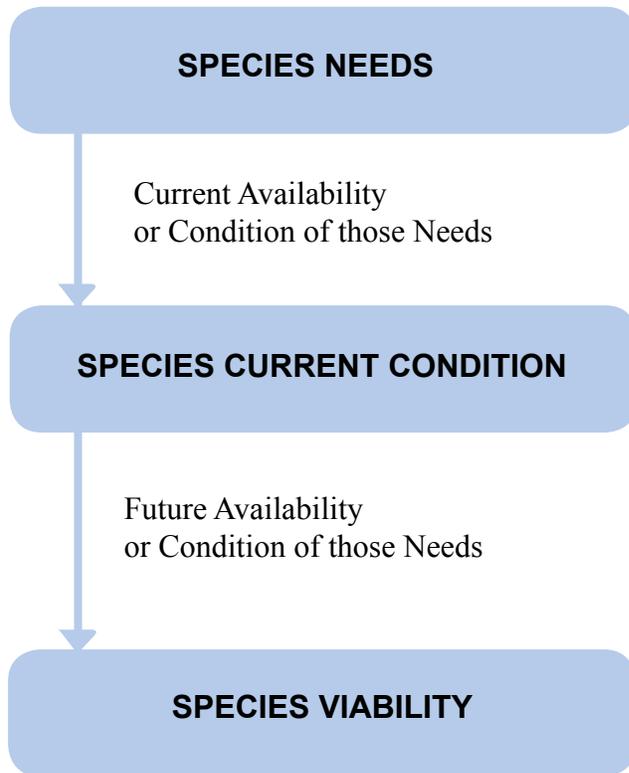
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

**U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171**

March 2014



Gunnison's prairie dog. Credit: USFWS

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FWS/R6/MTESO/Canada Lynx Status Assessment

July 1, 2015

Dear Director Hageners:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director Hagener

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Montana. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Jim Zelenak at (406) 449-5225, extension 220 (jim_zelenak@fws.gov).

Sincerely,



Jodi Bush
Field Office Supervisor

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathon Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ

From: Carrier, Michael
To: [Kim Garner](#); [Bryon Holt](#); [Ben Conard](#); [Dennis Mackey](#)
Subject: Fwd: Updated State Coordination Letter
Date: Monday, July 06, 2015 8:02:31 AM
Attachments: [2015 06 25 LTR Bush Hagener Lynx SSA Letter to States.pdf](#)
[SSA Fact Sheet.pdf](#)
[2015 0701 TEMPLATE Lynx SSA Letter to States.docx](#)

Kim

Would you and Bryon coordinate on preparing these for my signature next week or the following week.

Thanks

Mike

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Wed, Jul 1, 2015 at 11:00 AM

Subject: Updated State Coordination Letter

To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>

Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Michael Carrier, State Supervisor
Idaho Office, U.S. Fish and Wildlife Service
1387 S. Vinnell Way, Suite 368
Boise, Idaho 83709
(208) 685-6953
(503) 551-6340 (cell)

From: [Zelenak, Jim](#)
To: [Bell, Heather](#)
Subject: Re: Requesting assistance from FWS's Science Applications regarding climate change, for the upcoming SSA on Lynx!
Date: Monday, July 06, 2015 1:04:19 PM

no worries.

On Mon, Jul 6, 2015 at 1:02 PM, Bell, Heather <heather_bell@fws.gov> wrote:

Oops! sorry.....

Heather Bell
Ecological Services HQ
Branch of Conservation Integration
SSA Framework Team Lead
Remotely Located at
134 S. Union Blvd
Lakewood, CO 80228
303-236-4514

Check it out! SSA Framework - Google Site for Staff
at <https://sites.google.com/a/fws.gov/ssa/> and the REV Google
Site: <https://sites.google.com/a/fws.gov/rev/>

On Mon, Jul 6, 2015 at 12:59 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Thanks for getting those out Heather.

No big deal, but:

1. It is "Canada lynx," not "Canadian Lynx" (just like Canada goose....);

and,

2. It's "Zelenak," not "Zelanak" - Jodi does it all the time, too. (I'm told it means "green" in Hungarian/Croatian/Polish...

;-)

On Mon, Jul 6, 2015 at 12:49 PM, Bell, Heather <heather_bell@fws.gov> wrote:

Kate, given your programs climate change focus and your knowledge of the SSA Framework (you kindly reviewed and provided comments on the draft SSA Framework earlier this year) I am hoping you will be amenable to reviewing this request!

We are undertaking a Species Status Assessment for the Canadian Lynx in preparation for a 5-year review and, if applicable, recovery planning. The lead for the SSA, Jim Zelenak, believes that some assistance in understanding the effects of climate change on this wide ranging species would be critical in our assessment. We are struggling a bit on where the best place is to go for assistance given the many states this species (DPS) covers. Would you be willing to help us out either directly or in finding the best source for information?

Here is a short blurb Jim provided on the issue:

"Because the lynx is a boreal forest species reliant on snowshoe hares for food and persistent snow to out-compete other hare predators, we need to evaluate the potential effects of climate change on lynx populations within the DPS. We request your help in identifying resources and experts who might best inform our evaluation of how climate warming may impact boreal forest habitats, including the size, intensity, and periodicity of forest fires and insect outbreaks, as well as snowshoe hare populations and abundances, and the distribution and persistence snow conditions favorable to lynx."

Thank you for your consideration of this request!

Heather Bell
Ecological Services HQ
Branch of Conservation Integration
SSA Framework Team Lead
Remotely Located at
134 S. Union Blvd
Lakewood, CO 80228
303-236-4514

Check it out! SSA Framework - Google Site for Staff
at <https://sites.google.com/a/fws.gov/ssa/> and the REV Google
Site: <https://sites.google.com/a/fws.gov/rev/>

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

Lynx SSA Coordination Call – July 7, 2015

1) State Coordination Letter:

- Use template or other as needed;
- Once completed, please share with Jim Zelenak; by next week;
- Letter changes: paragraph top p. 2 – change location appropriately and typo in “cc” list (Mosela (not Moselo));
- Background to letter: AFWA letter identified many states interested in lynx DPS, etc. so JZ and others working on talking points re: states and others’ involvement in SSA; will work with invited experts on lynx, climate change, boreal forest, forest ecology, conservation genetics, etc.; will reach out to states to help ID experts but not about policy or state agency representation; will require careful FWS coordination with states;
- Core Team members: Zelenak, B. Holt (R1), K. Broderdorp (Colo.), T. Smith (R3), M. McCollough (ME).

2) Expert Elicitation Meeting:

- Identify most needed expertise and core team developing Google Drive site; putting together matrix to address;
- Hope to have final list of experts by late Aug./early Sept.
- Tentative meeting in Minneapolis, MN in mid-Sept. of soon after; 3-day meeting w/Day 1 - expert presentations and Days 2 & 3 – primarily structured Q&A w/experts; act as independent opinion rather consensus; good process for future predictions and typically involves issues with little available data;
- 10 (+/- 3) experts to address adequate viability of various lynx populations in DPS;
- Waiting to hear from Canadian counterparts, as DPS populations reliant on Can. pops.

3) Questions/Concerns/Other:

- Squires collaring lynx on Rio Grande NF in Colo.;
- loss of G. Hanvey from GYA but will tap into him on Flathead NF in MT;
- ME has new ssh and lynx habitat modeling info that will be ready for E.E. Mtg. in Sept.;
- Trapping HCP in ME developed last fall and several lynx trapped so state revising trapping regs and amendments to HCP;
- How to handle media questions re: lynx recovery --- Maybe engage FWS External Affairs as we’ll need consistent message; in meantime, go through J. Zelenak; also HQ (?) has some 1-page info sheets they can share;
- Need to keep USFS, BLM and Tribal partners updated too;
- Hope to complete SSA Report by end of 2015; anticipate doing Recovery Planning beginning Jan. 2016

From: Belleman, Ann
To: [Tamara Smith](#); [Lisa Mandell](#)
Cc: [Jim Zelenak](#)
Subject: Lynx SSA call notes attached
Date: Tuesday, July 07, 2015 11:04:55 AM
Attachments: [Lynx SSA Coordination Call 07072015.docx](#)

The call notes are attached.

Jim - if you notice any errors, please let me know (e.g., I think I spelled Moselo incorrectly).
Thanks.

Ann Belleman
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Field Office Complex
4101 American Blvd. E
Bloomington, MN 55425-1665

ann_belleman@fws.gov

307-421-5839 (work cell)
(612) 725-3548 (Bloomington, MN)



The Species Status Assessment Framework

An Integrated Framework for Conservation

“The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday’s logic.”

– Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation’s species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species’ biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

“The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation.”

– Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

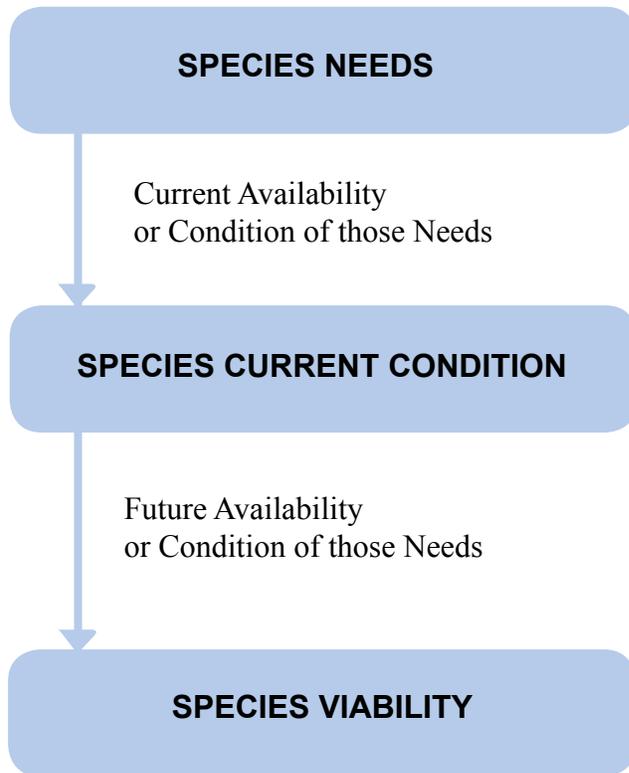
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

**U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171**

March 2014



Gunnison's prairie dog. Credit: USFWS

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, Maine 04473

Phone: (207) 866-3344 Fax: (207) 866-3351



In Reply Refer To:
FWS/R5/MMEFO/Canada Lynx Status Assessment

July 8, 2015

Dear Commissioner Woodcock:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director Hagener

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Maine. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact me or Mark McCollough (phone: 207 866-3344 x1115 email: mark_mccollough@fws.gov).

Sincerely,



Laury Zicari
Field Office Supervisor

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathan Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ

From: McCollough, Mark
To: [Chandler Woodcock](#); [Connolly, James](#); [Judy Camuso](#); [Wally Jakubas](#); [Jen Vashon](#); [Mosby, Cory E](#); [Gary Fraser](#)
Cc: jmawdsley@fishwildlife.org; Nick.Wiley@myfwc.com; [Laury Zicari](#); [Paul Phifer](#); [Mary Parkin](#); [Jim Zelenak](#); [Jodi Bush](#)
Subject: Canada lynx species status assessment
Date: Tuesday, July 07, 2015 11:45:15 AM
Attachments: [MDIFW lynx SSA letter.PDF](#)
[SSA Fact Sheet.pdf](#)

Dear Commissioner Woodcock and MDIFW staff:

As you know, the U. S. Fish and Wildlife Service is conducting a species status assessment (SSA) for the Canada lynx. The SSA will provide the scientific information needed for all determinations the Service is required to make (e.g., listing decisions, status review, critical habitat designations, and recovery plans).

State agencies and others with scientific expertise are important partners and contributors to the SSA process. The SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review. Please find an attached letter to further describe the process, timeline and opportunity for involvement by the Maine Department of Inland Fisheries and Wildlife. Also attached is a fact sheet concerning the SSA process.

We will have monthly calls with state agencies to provide updates on progress and to seek input at appropriate times during the SSA process. The first call is scheduled for July 29. Further details on these calls are contained in the attached letter.

If you have any questions throughout this process and our progress, please contact myself or Laury Zicari, Field Office Supervisor, Maine Field Office (207 866-3344 x1111).

Sincerely,

Mark McCollough (for Laury Zicari)

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

Signed:

Assistant Regional Director,
Ecological Services, R6



Project Leader,
Montana Ecological Services Field Office

Project Leader,
Colorado Ecological Services Field Office

Project Leader,
Wyoming Ecological Services Field Office

Assistant Regional Director,
Ecological Services, R1

Project Leader,
Washington Fish and Wildlife Office

Project Leader,
Idaho Fish and Wildlife Office

Assistant Regional Director,
Ecological Service, R2

Project Leader,
New Mexico Ecological Services Field Office

Assistant Regional Director,
Ecological Services, R3

Project Leader,
Twin Cities Ecological Services Field Office

Assistant Regional Director,
Ecological Services, R5

 07.07.2015
Project Leader,
Maine Ecological Services Field Office

Project Leader,
New England Ecological Services Field Office

From: McCollough, Mark
To: [Jodi Bush](#); [Jim Zelenak](#)
Cc: [Laury Zicari](#)
Subject: Maine Field Office signature page
Date: Tuesday, July 07, 2015 12:00:48 PM
Attachments: [Maine lynx ssa signature page.PDF](#)

Jodi and Jim:

Attached is Laury Zicari's signature for the lynx SSA plan.

Laury was on annual leave and unable to attend the call. I will bring her up to date on progress when she returns.

Thanks, Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FILE CODE

DATE, 2015

Dear **(Title)**:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director ~~Hagener~~XXXXXX

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in ~~Montana~~Your State. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact LOCAL NAME at (NUMBER) (EMAIL).

Sincerely,

NAME
TITLE

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathan Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ

From: Zelenak, Jim
To: [Eric Rickerson](#); [Michael Carrier](#); [Mark Sattelberg](#); [Ann Timberman](#); [Laury Zicari](#); [Drue DeBerry](#); [Tom Chapman](#); [Wally Murphy](#); [Peter Fasbender](#); [Jeff Krupka](#); [Bryon Holt](#); [Kurt Broderdorp](#); [Tamara Smith](#); [Ann Belleman](#); [Mark McCollough](#); [Anthony Tur](#); [Sarah Quamme](#); [Laura Ragan](#); [Eric Hein](#); [Sarah Hall](#); [Lisa Mandell](#)
Subject: Re: Updated State Coordination Letter
Date: Tuesday, July 07, 2015 12:03:06 PM
Attachments: [2015 0707 corrected TEMPLATE Lynx SSA Letter to States.docx](#)

Attached is a corrected version of the template letter for your use.

1. Also highlights top of page 2 where you need to delete "Montana" and put your state;
2. Corrects cc list from "Jonathon" to "Jonathan" Mawdsley
3. Also highlights need to change header from "Dear Director Hagener" to Dear Director (yours).

Let me know if you have questions. Thanks for getting these out.

Jim

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

Lynx SSA Coordination Call – July 7, 2015

1) State Coordination Letter:

- Use template or other as needed;
- Once completed, please share with Jim Zelenak; by next week;
- Letter changes: paragraph top p. 2 – change location appropriately and typo in “cc” list (~~Mosela (not Mosele)~~ “Jonathon” to “Jonathan” Mawsley); also change header to your State agency director.
- Background to letter: AFWA letter identified many states interested in lynx DPS, etc. so JZ and others working on talking points re: states and others’ involvement in SSA; will work with invited experts on lynx, climate change, boreal forest, forest ecology, conservation genetics, etc.; will reach out to states to help ID experts but not about policy or state agency representation; will require careful FWS coordination with states;
- Core Team members: Zelenak, B. Holt (R1), K. Broderdorp (Colo.), T. Smith (R3), M. McCollough (ME).

2) Expert Elicitation Meeting:

- Identify most needed expertise and core team developing Google Drive site; putting together matrix to address;
- Hope to have final list of experts by next week. ~~late Aug./early Sept.~~
- Tentative meeting in Minneapolis, MN in mid-Sept. ~~or f~~ soon after; 3-day meeting w/Day 1 - expert presentations and Days 2 & 3 – primarily structured Q&A w/experts; ~~aet~~ asseeking independent opinion rather than consensus; good process for future predictions and typically involves issues with little available data;
- 10 (+/- 3) experts to address current status and ~~adequate~~ likely viability of various lynx populations in DPS;
- Waiting to hear from Canadian counterparts, as DPS populations reliant on Can. pops.

3) Questions/Concerns/Other:

- Squires collaring lynx on Rio Grande NF in Colo.;
- loss of G. Hanvey from GYA but will tap into him on Flathead NF in MT;
- ME has new ssh and lynx habitat modeling info that will be ready for E.E. Mtg. in Sept.;
- Trapping HCP in ME developed last fall and several lynx trapped & killed, so Sstate revising trapping regs and amendments to HCP;
- How to handle media questions re: lynx recovery --- Maybe engage FWS External Affairs as we’ll need consistent message; in meantime, go through J. Zelenak; also HQ (?) has some 1-page info sheets they can share;
- Need to keep USFS, BLM and Tribal partners updated too;

- Hope to complete SSA Report by end of 2015; anticipate doing Recovery Planning beginning Jan. 2016; court-ordered deadline for final recovery plan by Jan. 2018.

From: Zelenak, Jim
To: [Belleman, Ann](#)
Subject: Re: Lynx SSA call notes attached
Date: Tuesday, July 07, 2015 12:38:39 PM
Attachments: [Lynx SSA Coordination Call Notes 07072015_ABelleman_jz edits.docx](#)

Thanks, Anne! I added a few things to the attached.

Would you be OK with me sending these to others on the call?

On Tue, Jul 7, 2015 at 11:04 AM, Belleman, Ann <ann_belleman@fws.gov> wrote:

The call notes are attached.

Jim - if you notice any errors, please let me know (e.g., I think I spelled Moselo incorrectly). Thanks.

Ann Belleman
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Field Office Complex
4101 American Blvd. E
Bloomington, MN 55425-1665

ann_belleman@fws.gov

307-421-5839 (work cell)
(612) 725-3548 (Bloomington, MN)

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Smith, David](#)
To: [Jim Zelenak](#); [Mary Parkin](#); [Heather Bell](#); [Jonathan Cummings](#); [Jennifer Szymanski](#); [Seth Willey](#)
Subject: lynx call
Date: Tuesday, July 07, 2015 1:32:05 PM

Hey all,

I wanted to pass along a few quick thoughts based on today's lynx conf call regarding the expert meeting, which I did not want to bring up during the call. These are in no particular order nor do they require a specific response. These are simply for future consideration by the team. You've probably considered them already, but I have been out of the loop since the Denver workshop.

- Attendance of observers at the workshop should be limited to as few as politically feasible. The experts should be relaxed and willing to share their knowledge; a large audience can be counterproductive to that. Also, observers should not participate except to ask clarifying questions or their participation should be restricted to asking questions through the facilitators. An audience that seems to be challenging the experts can be really counterproductive.
- It wasn't clear from the conf call whether the questions will be structured around a predictive model or not. Ideally it would be. The questions would help to parameterize that model and then the model would be used to assess species response to future scenarios. Questions would also elicit the likelihood of the future scenarios, which are model inputs. In the absence of a predictive model, the questions would focus directly on species response.
- Do you anticipate a FOIA request and what's the best way to keep records in case of a FOIA? Recent experience makes me wonder.
- The webinar preceding the workshop should prepare the experts for the elicitation process as well as for the ecological/conservation topics that will be discussed. A brief review on recent literature regarding the value and rigor of formal expert elicitation (while dry and a bit boring) could address some expert's concerns and head off any reluctance by the experts to participate fully.

Cheers,
Dave

David R. Smith
USGS - Leetown Science Center
11649 Leetown Road
Kearneysville, WV 25430
drsmith@usgs.gov
304-724-4467
<https://profile.usgs.gov/drsmith>
[ResearchGate profile](#)

From: [Zelenak, Jim](#)
To: [McCollough, Mark](#)
Subject: Re: Expert elicitation meeting
Date: Tuesday, July 07, 2015 2:23:47 PM

Excellent! Thanks, Mark.

I'm scheduled to be at NCTC for Recovery Planning Course Sept. 21-25 (timely??), then a quick visit to see family and friends in PA before bringing my Mom out here to visit for early Oct., so that lines up better with Dan's likely schedule. However, antelope season opens Oct. 10, and deer/elk 2 weeks later.....there's just no good time really.....

On Tue, Jul 7, 2015 at 2:09 PM, McCollough, Mark <mark_mccollough@fws.gov> wrote:
Jim:

I talked to Dan Harrison today, and he would be very interested in participating in the SSA expert elicitation process. He said that he (and other academics) would be very busy in late August and the first week or two of September when the academic year starts. He would be most available toward mid- to late-September. He also wanted us to know that it is likely that he and other lynx experts will be attending the TWS annual meeting in Manitoba in mid-October. Dates immediately prior to the TWS meeting (e.g. Oct. 14, 15, 16) would be good.

UMaine has a Climate Change Institute. Dan recommended that George Jacobson, Maine State Climatologist and author of *Maine's Climate Future*, be considered as a Northeast expert. He would have the greatest overall breadth of knowledge of climate change information stepped down to Maine (including snowfall and characteristics, effects on vegetation communities). See the 2015 update to the UMaine publication *Maine's Climate Future* at
-- <http://climatechange.umaine.edu/research/publications/climate-future>

Mark

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220

jim_zelenak@fws.gov

From: [Zelenak, Jim](#)
To: [McCollough, Mark](#)
Subject: Re: Expert elicitation meeting
Date: Tuesday, July 07, 2015 4:23:50 PM

Excellent! Thanks, Mark.

I'm scheduled to be at NCTC for Recovery Planning Course Sept. 21-25 (timely??), then a quick visit to see family and friends in PA before bringing my Mom out here to visit for early Oct., so that lines up better with Dan's likely schedule. However, antelope season opens Oct. 10, and deer/elk 2 weeks later.....there's just no good time really.....

On Tue, Jul 7, 2015 at 2:09 PM, McCollough, Mark <mark_mccollough@fws.gov> wrote:
Jim:

I talked to Dan Harrison today, and he would be very interested in participating in the SSA expert elicitation process. He said that he (and other academics) would be very busy in late August and the first week or two of September when the academic year starts. He would be most available toward mid- to late-September. He also wanted us to know that it is likely that he and other lynx experts will be attending the TWS annual meeting in Manitoba in mid-October. Dates immediately prior to the TWS meeting (e.g. Oct. 14, 15, 16) would be good.

UMaine has a Climate Change Institute. Dan recommended that George Jacobson, Maine State Climatologist and author of *Maine's Climate Future*, be considered as a Northeast expert. He would have the greatest overall breadth of knowledge of climate change information stepped down to Maine (including snowfall and characteristics, effects on vegetation communities). See the 2015 update to the UMaine publication *Maine's Climate Future* at
-- <http://climatechange.umaine.edu/research/publications/climate-future>

Mark

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220

jim_zelenak@fws.gov

From: Belleman, Ann
To: Zelenak, Jim
Subject: Re: Lynx SSA call notes attached
Date: Tuesday, July 07, 2015 4:44:02 PM

Yes, of course. And thanks for correcting. If you want to send them to the group, then I won't bother to send a corrected version to Tam. Just let me know - A

Ann Belleman
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Field Office Complex
4101 American Blvd. E
Bloomington, MN 55425-1665

ann_belleman@fws.gov

307-421-5839 (work cell)
(612) 725-3548 (Bloomington, MN)

On Tue, Jul 7, 2015 at 1:38 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Thanks, Anne! I added a few things to the attached.

Would you be OK with me sending these to others on the call?

On Tue, Jul 7, 2015 at 11:04 AM, Belleman, Ann <ann_belleman@fws.gov> wrote:

The call notes are attached.

Jim - if you notice any errors, please let me know (e.g., I think I spelled Moselo incorrectly). Thanks.

Ann Belleman
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Field Office Complex
4101 American Blvd. E
Bloomington, MN 55425-1665

ann_belleman@fws.gov

307-421-5839 (work cell)
(612) 725-3548 (Bloomington, MN)

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1

Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: Solberg Schwab, Lisa
To: [Belleman, Ann](#)
Subject: Re: Updated State Coordination Letter
Date: Tuesday, July 07, 2015 5:30:59 PM

OK thanks!

Lisa Solberg Schwab
Biologist
USFWS, Wyoming ES Field Office
located at
BLM Pinedale Field Office
1625 W. Pine St.
P.O. Box 768
Pinedale, WY 82941
(307) 367-5340

On Tue, Jul 7, 2015 at 4:42 PM, Belleman, Ann <ann_belleman@fws.gov> wrote:

No. This SSA is brand new, so no TAILS # and I'm not sure what you'd put it under. Probably best to ask Nathan, as he's the TAILS guru in our office. :-)

Ann Belleman
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Field Office Complex
4101 American Blvd. E
Bloomington, MN 55425-1665

ann_belleman@fws.gov

307-421-5839 (work cell)
(612) 725-3548 (Bloomington, MN)

On Tue, Jul 7, 2015 at 12:20 PM, Solberg Schwab, Lisa <lisa_solbergschwab@fws.gov> wrote:

Ann,

I have now been assigned this, did you have something in TAILS that I should be working under?

Thanks.
lisa

Lisa Solberg Schwab
Biologist
USFWS, Wyoming ES Field Office
located at
BLM Pinedale Field Office

1625 W. Pine St.
P.O. Box 768
Pinedale, WY 82941
(307) 367-5340

On Wed, Jul 1, 2015 at 12:19 PM, Belleman, Ann <ann_belleman@fws.gov> wrote:
Lisa - You're not on this email list but you may end up having to help with this (I did in the past). But maybe Mark will let you off the hook!

Ann Belleman
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Field Office Complex
4101 American Blvd. E
Bloomington, MN 55425-1665

ann_belleman@fws.gov

307-421-5839 (work cell)
(612) 725-3548 (Bloomington, MN)

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
Date: Wed, Jul 1, 2015 at 11:00 AM
Subject: Updated State Coordination Letter
To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>
Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably

within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

From: [Zelenak, Jim](#)
To: [Parkin, Mary](#)
Cc: [Heather Bell](#); [Seth Willey](#); [Nathan Allan](#); [Jodi Bush](#)
Subject: Re: SSA talking points with changes made
Date: Wednesday, July 08, 2015 9:32:36 AM

I think these look great - thanks Mary!

Jodi, Seth, and Heather - let me know if you are OK with me sending this to the FWS folks invited to yesterday's lynx SSA FWS coordination call. I think these would be helpful to those folks in responding to the questions they are likely to receive after they send out the state coordination letter (some office have already sent the letter).

Thanks,

Jim

On Wed, Jul 8, 2015 at 7:50 AM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi folks,

Thanks for the good comments on the draft talking points. I've accepted your edits plus made more of my own. I hope this is now ready for distribution. Of course, it can be one of those things that undergoes continual improvement as we learn more.

Re: communicating in general and the question that came up about media communications, I think it'd be good to get EA involved in this as soon as appropriate.

Jim, regarding your comment about the potential messiness of inviting States to suggest experts, and possibly vetting experts with them, could we keep it as simple as "thanks for your suggestion and we'll take it under consideration"? Please note that for the lynx talking points, I changes "invite" suggestions to "will be receptive to" suggestions. I wouldn't recommend sharing the prioritized list with partners -- too sensitive -- but rather sharing the list once we've finalized it and accepting State comments on it.

The latest draft talking points are attached. I'll be off-line until tomorrow, so if one of you wants to get this out in the meantime, have at it!

Cheers,
Mary

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Zelenak, Jim](#)
To: [Bell, Heather](#)
Subject: Re: SSA talking points with changes made
Date: Wednesday, July 08, 2015 10:09:41 AM

All/most of my edits were accepted. Don't think I saw yours or Nathans.

On Wed, Jul 8, 2015 at 10:00 AM, Bell, Heather <heather_bell@fws.gov> wrote:

Mary, it doesn't look like changes were accepted. Could we chat when you get back on line? Nathan is concerned that the current version would lead states to believe we always need extensive outside collaboration or use of experts. Thanks! h

Heather Bell
Ecological Services HQ
Branch of Conservation Integration
SSA Framework Team Lead
Remotely Located at
134 S. Union Blvd
Lakewood, CO 80228
303-236-4514

Check it out! SSA Framework - Google Site for Staff
at <https://sites.google.com/a/fws.gov/ssa/> and the REV Google
Site: <https://sites.google.com/a/fws.gov/rev/>

On Wed, Jul 8, 2015 at 7:50 AM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi folks,

Thanks for the good comments on the draft talking points. I've accepted your edits plus made more of my own. I hope this is now ready for distribution. Of course, it can be one of those things that undergoes continual improvement as we learn more.

Re: communicating in general and the question that came up about media communications, I think it'd be good to get EA involved in this as soon as appropriate.

Jim, regarding your comment about the potential messiness of inviting States to suggest experts, and possibly vetting experts with them, could we keep it as simple as "thanks for your suggestion and we'll take it under consideration"? Please note that for the lynx talking points, I changes "invite" suggestions to "will be receptive to" suggestions. I wouldn't recommend sharing the prioritized list with partners -- too sensitive -- but rather sharing the list once we've finalized it and accepting State comments on it.

The latest draft talking points are attached. I'll be off-line until tomorrow, so if one of you wants to get this out in the meantime, have at it!

Cheers,
Mary

--

Mary Parkin

*Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov*

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Zelenak, Jim](#)
To: [Heather Bell](#)
Subject: Quick call?
Date: Wednesday, July 08, 2015 10:42:15 AM

Let me know if you have time for a quick call between now and about 12:30 (gone after that for rest of day for off-site staff mtg. here). I'm trying to outline the agenda/topics for the expert elicitation meeting for lynx SSA and have a couple questions for you.

Thanks,

J

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Bush, Jodi](#)
To: [Jonathan Mawdsley](#)
Subject: Re: thanks for the call!
Date: Wednesday, July 08, 2015 11:28:27 AM

Jonathan. 1pm EST works fine. You can call me at the number below. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 1:43 PM, Jonathan Mawdsley <jmawdsley@fishwildlife.org> wrote:

Hi Jodi,

How about 1 PM Eastern on Thursday the 9th? I could also possibly do any time from 1-5 PM Eastern that day, in case there is another time in that window that would work for you. Looking forward to talking with you soon!

All the best,

Jonathan

From: Bush, Jodi <jodi_bush@fws.gov>
Sent: Monday, June 29, 2015 5:15 PM
To: Jonathan Mawdsley
Subject: Re: thanks for the call!

Hi Jonathan. I'm happy to chat. I am fairly open either Thurs or Friday next week (July 9-10). Pick a time and I'll block it on my calendar. Talk to you soon. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601

(406) 449-5225, ext.205

On Mon, Jun 29, 2015 at 2:57 PM, Jonathan Mawdsley <jmawdsley@fishwildlife.org> wrote:

Hello Jodi,

Many thanks for the call and for the voicemail message - this is all good news and I am sure it will be well received by the states. Thank you very much for your efforts to engage states in the assessment process. Following up on your voicemail, I would very much like to talk with you about the lynx status assessment and similar efforts. I am currently out of the office at the MAFWA meetings in Minnesota this week. Might there be a time next week or the week following when we could talk? Please feel free to suggest a few dates/times that would work well for you. Thanks again for the call - I look forward to talking with you soon.

All the best,

Jonathan

From: [Allan, Nathan](#)
To: [Willey, Seth](#)
Cc: [Bell, Heather](#); [Parkin, Mary](#); [Jim Zelenak](#); [Jodi Bush](#)
Subject: Re: SSA talking points with changes made
Date: Wednesday, July 08, 2015 1:52:04 PM

Somewhere there are a few comments from me.

My concern is that these talking points fit great for lynx and other species with high-levels of outside involvement, but these expectations won't be needed to the same degree for species that are not so high profile (narrow endemics with minimal controversy and experts).

On Wed, Jul 8, 2015 at 2:48 PM, Willey, Seth <seth_willey@fws.gov> wrote:

A couple of clarifying points... and it sounds like we need to cross walk the various sets of edits...

otherwise, this looks good!

Thanks,
Seth

Seth L. Willey
Act Regional ESA Chief
Mountain-Prairie Region
Seth_Willey@fws.gov
303-236-4257

On Wed, Jul 8, 2015 at 10:00 AM, Bell, Heather <heather_bell@fws.gov> wrote:

Mary, it doesn't look like changes were accepted. Could we chat when you get back on line? Nathan is concerned that the current version would lead states to believe we always need extensive outside collaboration or use of experts. Thanks! h

Heather Bell
Ecological Services HQ
Branch of Conservation Integration
SSA Framework Team Lead
Remotely Located at
134 S. Union Blvd
Lakewood, CO 80228
303-236-4514

Check it out! SSA Framework - Google Site for Staff
at <https://sites.google.com/a/fws.gov/ssa/> and the REV Google
Site: <https://sites.google.com/a/fws.gov/rev/>

On Wed, Jul 8, 2015 at 7:50 AM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi folks,

Thanks for the good comments on the draft talking points. I've accepted your edits plus made more of my own. I hope this is now ready for distribution. Of course, it can be one of those things that undergoes continual improvement as we learn more.

Re: communicating in general and the question that came up about media communications, I think it'd be good to get EA involved in this as soon as appropriate.

Jim, regarding your comment about the potential messiness of inviting States to suggest experts, and possibly vetting experts with them, could we keep it as simple as "thanks for your suggestion and we'll take it under consideration"? Please note that for the lynx talking points, I changes "invite" suggestions to "will be receptive to" suggestions. I wouldn't recommend sharing the prioritized list with partners -- too sensitive -- but rather sharing the list once we've finalized it and accepting State comments on it.

The latest draft talking points are attached. I'll be off-line until tomorrow, so if one of you wants to get this out in the meantime, have at it!

Cheers,
Mary

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Nathan Allan
U.S. Fish and Wildlife Service
Region 2, RO-Ecological Services, Decision Support Division
10711 Burnet Road, Suite 200, Austin, Texas 78758
(512) 490-0057 x237
[Check out the SSA!](#)

From: [Bush, Jodi](#)
To: [Chapman, Tom](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Thursday, July 09, 2015 1:27:21 PM

thanks Tom

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Thu, Jul 9, 2015 at 1:10 PM, Chapman, Tom <tom_chapman@fws.gov> wrote:

Hi Jodi,

The New England Field Office does not include New York in our service area, so as you suggested I have copied David Stilwell the PL at NYFO so he can be drawn into this process too.

Regards,

Tomm

On Thu, Jul 9, 2015 at 1:45 PM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Tom

I'm not sure if you cover New York or not. If so can you send them a letter as well. The AFWA folks have identified them as a very interested party (Director, Gordon Bachelor?). If you don't cover them can you let me know who does so I can get them in the loop? thanks for your help. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
Date: Thu, Jul 9, 2015 at 11:42 AM
Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury

Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>
Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Thomas R. Chapman
Supervisor - New England Field Office
U.S. Fish & Wildlife Service
Northeast Region - Ecological Services
70 Commercial St., Suite 300
Concord, NH 03301

603.223.2541 ext. 6410
603.724.5104 cell



U.S. Fish & Wildlife Service

The Species Status Assessment Framework

An Integrated Framework for Conservation

“The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday’s logic.”

– Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation’s species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species’ biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

“The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation.”

– Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

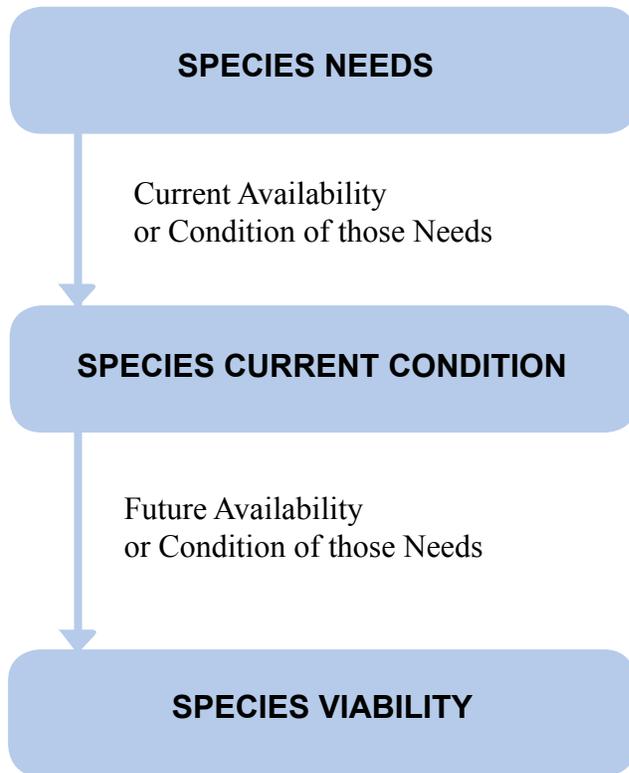
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

**U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171**

March 2014



Gunnison's prairie dog. Credit: USFWS

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FWS/R6/MTESO/Canada Lynx Status Assessment

July 1, 2015

Dear Director Hageners:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director Hagener

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Montana. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Jim Zelenak at (406) 449-5225, extension 220 (jim_zelenak@fws.gov).

Sincerely,



Jodi Bush
Field Office Supervisor

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathon Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FILE CODE

DATE, 2015

Dear **(Title)**:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director (NAME)

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in YOUR STATE. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact LOCAL NAME at (NUMBER) (EMAIL).

Sincerely,

NAME
TITLE

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathan Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ

From: Bush, Jodi
To: [Eric Rickerson](#); [Michael Carrier](#); [Mark Sattelberg](#); [Ann Timberman](#); [Drue DeBerry](#); [Laury Zicari](#); [Tom Chapman](#); [Wally Murphy](#); [Peter Fasbender](#)
Cc: [Jeff Krupka](#); [Byron Holt](#); [Kurt Broderdorp](#); [Tamara Smith](#); [Ann Belleman](#); [Mark McCollough](#); [Jim Zelanak](#); [Anthony Tur](#); [Seth Willey](#); [Sarah Quamme](#); [Laura Ragan](#); [Krishna Gifford](#); [Eric Hein](#); [Sarah Hall](#); [Michael Thabault](#); [Lisa Mandell](#)
Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Thursday, July 09, 2015 11:42:53 AM
Attachments: [2015 0701 TEMPLATE Lynx SSA Letter to States.docx](#)
[2015 06 25 LTR Bush_Hagener Lynx SSA Letter to States.pdf](#)
[SSA Fact Sheet.pdf](#)

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

From: [Bush, Jodi](#)
To: [Gifford, Krishna](#)
Cc: [Mary Parkin](#); [Jim Zelenak](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Thursday, July 09, 2015 11:47:31 AM

Sorry Krishna -used same letter list. Will try to remember its not you. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Thu, Jul 9, 2015 at 11:44 AM, Gifford, Krishna <krishna_gifford@fws.gov> wrote:
Mary - Would you please follow up with the NEFO folks to see where they are with Jodi's request. Thanks. -Krishna

Krishna Gifford

Candidate & Classification Coordinator
U.S. Fish and Wildlife Service - Northeast Region
Endangered Species Program
300 Westgate Center Dr.
Hadley, MA 01035
413-253-8619 (v); 413-253-8482 (f)

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
Date: Thu, Jul 9, 2015 at 1:42 PM
Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>
Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this

month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

From: [Bush, Jodi](#)
To: [Hall, Sarah](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Thursday, July 09, 2015 12:47:20 PM

ok thanks. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Thu, Jul 9, 2015 at 11:59 AM, Hall, Sarah <sarah_hall@fws.gov> wrote:

Hi Jodi,

Just fyi, our R1 ES PLs are at a meeting in Portland this week. It's my understanding that Bryon is working on an ID letter for Mike to sign next week. Bryon is also working with Jeff Krupka on a WA letter for Eric's signature, most likely next week as well. Bryon is out the rest of this week, but hopefully can provide an update early next week.

Thanks,
Sarah

Sarah Hall
Endangered Species Recovery Program Manager
USFWS Pacific Region

On Thu, Jul 9, 2015 at 10:42 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

From: [Bush, Jodi](#)
To: [Garner, Kim](#)
Cc: [Jim Zelenak](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Thursday, July 09, 2015 1:27:03 PM

great -thanks. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Thu, Jul 9, 2015 at 1:25 PM, Garner, Kim <kim_garner@fws.gov> wrote:

Hi Jodi,

Sarah's correct, we have the letter ready for Mike's signature and will send it out early next week. Thanks,

Kim

Kim Garner
Chief, Classification and Recovery Branch
Idaho Fish and Wildlife Office
U.S. Fish and Wildlife Service
1387 S. Vinnell Way, Room 368
Boise, ID 83709
work: (208) 378-5265

On Thu, Jul 9, 2015 at 11:59 AM, Hall, Sarah <sarah_hall@fws.gov> wrote:

Hi Jodi,

Just fyi, our R1 ES PLs are at a meeting in Portland this week. It's my understanding that Bryon is working on an ID letter for Mike to sign next week. Bryon is also working with Jeff Krupka on a WA letter for Eric's signature, most likely next week as well. Bryon is out the rest of this week, but hopefully can provide an update early next week.

Thanks,
Sarah

Sarah Hall
Endangered Species Recovery Program Manager
USFWS Pacific Region

On Thu, Jul 9, 2015 at 10:42 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205



Gifford, Krishna <krishna_gifford@fws.gov>

Fwd: ATTENTION -NEEDS ACTION: Updated State Coordination Letter

1 message

Gifford, Krishna <krishna_gifford@fws.gov>
 To: Mary Parkin <mary_parkin@fws.gov>
 Cc: Jodi Bush <jodi_bush@fws.gov>

Thu, Jul 9, 2015 at 1:44 PM

Mary - Would you please follow up with the NEFO folks to see where they are with Jodi's request. Thanks. -Krishna

 Krishna Gifford

Candidate & Classification Coordinator
 U.S. Fish and Wildlife Service - Northeast Region
 Endangered Species Program
 300 Westgate Center Dr.
 Hadley, MA 01035
 413-253-8619 (v); 413-253-8482 (f)

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
 Date: Thu, Jul 9, 2015 at 1:42 PM
 Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
 To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>
 Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelenak -our Service lynx Lead.

Jodi L. Bush
 Field Supervisor
 Montana Ecological Services Office
 585 Shepard Way, Suite 1
 Helena, MT 59601
 (406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc **Gary Frazer (FWS)**, **Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator)** jmawdsley@fishwildlife.org and **Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair)** Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service Lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

3 attachments

-  **2015 0701 TEMPLATE Lynx SSA Letter to States.docx**
97K
-  **2015 06 25 LTR Bush_Hagener Lynx SSA Letter to States.pdf**
55K
-  **SSA Fact Sheet.pdf**
228K

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FWS/R6/MTESO/Canada Lynx Status Assessment

July 1, 2015

Dear Director Hageners:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director Hagener

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Montana. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Jim Zelenak at (406) 449-5225, extension 220 (jim_zelenak@fws.gov).

Sincerely,



Jodi Bush
Field Office Supervisor

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathon Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FILE CODE

DATE, 2015

Dear **(Title)**:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director (NAME)

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in YOUR STATE. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact LOCAL NAME at (NUMBER) (EMAIL).

Sincerely,

NAME
TITLE

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathan Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ



U.S. Fish & Wildlife Service

The Species Status Assessment Framework

An Integrated Framework for Conservation

“The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday’s logic.”

– Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation’s species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species’ biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

“The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation.”

– Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

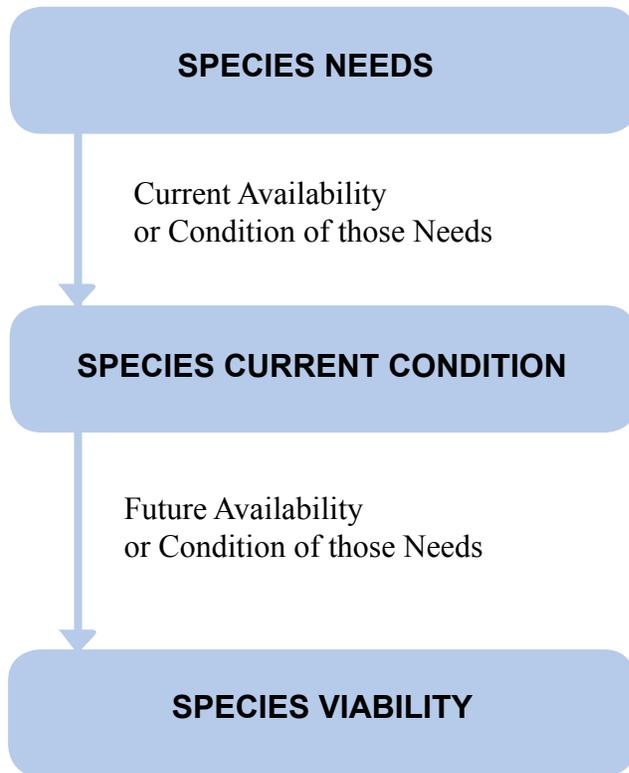
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

**U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171**

March 2014



Gunnison's prairie dog. Credit: USFWS

United States Department of the Interior



Fish and Wildlife Service
Ecological Services
Twin Cities Field Office
4101 American Boulevard East
Bloomington, Minnesota 55425-1665
Phone: (612) 725-3548 Fax: (612) 725-3609



In Reply Refer To:
FILE CODE

July 9, 2015

Dear **(Title)**:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director (NAME)

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in **CHOOSE: Minnesota Wisconsin, or Michigan**. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Tamara Smith at (612-725-3548, ext. 2219) (tamara_smith@fws.gov).

Sincerely,

Peter Fasbender
Field Supervisor

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathan Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ

From: Belleman, Ann
To: [Lisa Mandell](#)
Subject: Draft SSA letter to states
Date: Thursday, July 09, 2015 1:55:59 PM
Attachments: [Lynx SSA Letter to States July 2015_ab draft.docx](#)

There are some blanks to be filled in or select from:

File Code # (do you want this as a TAILS entry or something else?)

Date

Name of State Directors

appropriate state

I'm guessing someone knows the 3 state directors' names in MN, WI, and MI, but if not, let me know and I'll find them. Let me know if I can do anything more!

Ann Belleman
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Field Office Complex
4101 American Blvd. E
Bloomington, MN 55425-1665

ann_belleman@fws.gov

307-421-5839 (work cell)
(612) 725-3548 (Bloomington, MN)

From: [McCollough, Mark](#)
To: [Jim Zelenak](#)
Subject: article re climate change and lynx genetics at southern edge of range
Date: Thursday, July 09, 2015 2:23:17 PM

Jim: I was not aware of this article that links climate change to range contraction and loss of genetic diversity in Ontario. Do you have a pdf? There is a fee for downloading.

Also, seems like Dennis Murray would be a good person to invite to our expert elicitation. May have a good handle on lynx across Canada.

Mark

Climate change reduces genetic diversity of Canada lynx at the trailing range edge

1. E. L. Koen¹,
2. J. Bowman²,
3. D. L. Murray³ and
4. P. J. Wilson³

Article first published online: 17 JAN 2014

DOI: 10.1111/j.1600-0587.2013.00629.x

© 2014 The Authors

Issue



Ecography

[Volume 37, Issue 8](#), pages 754–762, August 2014

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: Zelenak, Jim
To: McCollough, Mark
Subject: Re: Recent Lynx Publications from Ontario
Date: Thursday, July 09, 2015 2:50:35 PM

I don't see Hornseth in my recent collection - could you send me a PDF?

I'll be talking with Erin tomorrow to ask her about whether she or one of her Trent colleagues might be interested in attending our expert elicitation meeting.

She's now a Postdoctoral fellow at the Cooperative Wildlife Research Laboratory, Southern Illinois University

<http://sites.google.com/site/erinlkoen/>

On Thu, Jul 9, 2015 at 2:29 PM, McCollough, Mark <mark_mccollough@fws.gov> wrote:
yes, you sent. sorry it escaped my attention. I'm also reading the Hornseth paper today - habitat loss vs. fragmentation at southern edge of range. All very interesting and appropos to the SSA. Mark

----- Forwarded message -----

From: **Zelenak, Jim** <jim_zelenak@fws.gov>
Date: Tue, Jun 9, 2015 at 9:46 AM
Subject: Recent Lynx Publications from Ontario
To: Mark McCollough <mark_mccollough@fws.gov>, Tamara Smith <tamara_smith@fws.gov>, Bryon Holt <bryon_holt@fws.gov>, Kurt Broderdorp <kurt_broderdorp@fws.gov>, Mary Parkin <mary_parkin@fws.gov>, David Smith <drsmith@usgs.gov>, Jonathan Cummings <jwcummings@usgs.gov>

Hi Team:

I sent this to Tam yesterday, but thought the rest of the Core SSA Team and some of our friends at USGS would be interested as well.

For the SSA and subsequent recovery planning and other lynx ESA decisions, we are going to have to assess the distribution, status, and viability of lynx populations in southern Canada that interact with subpopulations in the DPS, especially with regard to potential effects of climate change.

Some interesting papers have recently come out of Trent University in Ontario., though I haven't read them carefully yet.

<http://people.trentu.ca/~jebowman/lynx.htm>

I contacted Dr. Koen yesterday, and she sent me PDFs of the most recent docs, only one of which I'd been able earlier to pull off the web. I've attached them for you in case you haven't seen them yet. The 2015 doc has been accepted and is in press. She or one of her colleagues at Trent might be worth considering for expert elicitation for lynx DPS viability modeling as we move down that road with the SSA.

Cheers!

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1

Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Bush, Jodi](#)
To: [Zelenak, Jim](#)
Subject: Re: Lynx contacts
Date: Thursday, July 09, 2015 3:02:34 PM

yes

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Thu, Jul 9, 2015 at 2:52 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Remove Ben C., too?

I'm working on a list to make sure we have all the state ES Field Supervisors - can we go over it together in a bit?

On Thu, Jul 9, 2015 at 2:04 PM, Bush, Jodi <jodi_bush@fws.gov> wrote:

yes

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Thu, Jul 9, 2015 at 1:37 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Should we take Bridget Fahey off the list, too?

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1

Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Parkin, Mary](#)
To: [Gifford, Krishna](#)
Cc: [Jodi Bush](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Thursday, July 09, 2015 7:45:33 PM

Hi both,

I'll talk with Tony or Tom tomorrow, Krishna (I was on the road today because of a delayed flight last night). No one from NEFO was on Tuesday's monthly lynx call, so I couldn't get a read at that time.

Will get back to you tomorrow and will ensure that these letters get to VT and NH asap.

Best,
Mary

On Thu, Jul 9, 2015 at 11:44 AM, Gifford, Krishna <krishna_gifford@fws.gov> wrote:
Mary - Would you please follow up with the NEFO folks to see where they are with Jodi's request. Thanks. -Krishna

Krishna Gifford

Candidate & Classification Coordinator
U.S. Fish and Wildlife Service - Northeast Region
Endangered Species Program
300 Westgate Center Dr.
Hadley, MA 01035
413-253-8619 (v); 413-253-8482 (f)

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
Date: Thu, Jul 9, 2015 at 1:42 PM
Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>
Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its

important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Mary Parkin

Endangered Species Recovery Coordinator, Northeast Region

U.S. Fish and Wildlife Service, Hadley, MA

Remotely located in Escalante, Utah:

Mailing address PO Box 637, Escalante, UT 84726

Street address 145 North Center St, Escalante, UT 84726

Phone 617-417-3331

Email mary_parkin@fws.gov

From: [Bush, Jodi](#)
To: [Quamme, Sarah](#)
Cc: [Jim Zelenak](#)
Subject: Re: Updated State Coordination Letter
Date: Friday, July 10, 2015 8:31:10 AM

yes. Thanks. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Thu, Jul 9, 2015 at 3:53 PM, Quamme, Sarah <sarah_quamme@fws.gov> wrote:
Hi Jodi - Could you please take me off this list and add Brady McGee instead? Thanks!

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:
Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

*Sarah Joan Quamme, Listing Coordinator
U.S. Fish & Wildlife Service
P.O. Box 1306, Albuquerque, NM 87103
505/248-6419; 505/379-5909 (cell)*

From: [Bush, Jodi](#)
To: [Brent Esmoil](#); [Jim Zelenak](#)
Subject: Fwd: letter from AFWA T&E Species Policy committee on Canada Lynx
Date: Friday, July 10, 2015 10:32:28 AM

fyi

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
Date: Fri, Jul 10, 2015 at 10:31 AM
Subject: Re: letter from AFWA T&E Species Policy committee on Canada Lynx
To: "Frazer, Gary" <gary_frazer@fws.gov>
Cc: Michael Thabault <michael_thabault@fws.gov>, Seth Willey <seth_willey@fws.gov>

Here you go. Let me know if you need something different. JB

- We are working on a Lynx Recovery Plan in response to court ordered settlement using the Species Status Assessment process (SSA).
- The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act.
- Over the next several months, the Service will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS.
- We are scheduling monthly calls with State wildlife management agencies within the range of the Lynx DPS to provide updates on our SSA progress
- We will be seeking input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS.
- Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time.
- To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report.
- We hope to complete the SSA report by December of 2015 and then begin the recovery

planning process.

- The Service intends to complete a recovery plan for the lynx DPS by January 15, 2018 in order to meet the court-ordered deadline.
- We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats.
- We appreciate the States interest and involvement in Lynx recovery and look forward to continued collaboration throughout this process.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Fri, Jul 10, 2015 at 10:12 AM, Frazer, Gary <gary_frazer@fws.gov> wrote:

Thanks, Jodi. I have been copied on a couple of the letters and appreciate that.

If you want to send me a few talking points regarding status of this SSA and engagement of the states, I'd be happy to convey that message at the summer AFWA meeting. And I'll also be at the WAFWA meeting in a couple weeks. -- GDF

Gary Frazer
Assistant Director -- Ecological Services
U.S. Fish and Wildlife Service
(202) 208-4646

On Fri, Jul 10, 2015 at 12:05 PM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Gary. I was able to talk to Jonathan about our process and where the States could play a part. We are also sending an updated letter to all of our state partners clarifying our process and identifying their roles. In that letter we also scheduled a monthly coordination call to keep them up to date. You should have seen a couple of these letters already as I asked them to cc you, Jonathan and Nick. Attached is the MT version.

Jonathan suggested that you provide an update at the AFWA annual Meeting in Tuscon in September. I'm happy to help you with this if needed. Generally though I think its a " We appreciate the States buy in and support" talk.

Mike - I wondered if Noreen would feel comfortable repeating some of what it is in the letter to the WAFWA crowd -in particular bringing up the information on the monthly

coordination call. Let me know if you would like me to chat further with her or you on that topic. We did provide talking points on this topic to Seth (along with the wolverine ones). Hopefully those made it to her.

Let me know if you have questions. I think we are moving forward appropriately with the states for now.

Now I just have to figure out Tribal involvement. Cheers. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Sat, Jun 6, 2015 at 12:31 AM, Frazer, Gary <gary_frazer@fws.gov> wrote:
Jonathan/Nick -- I discussed your letter this week with Assistant Regional Director Mike Thabault and MT Ecological Services Project Leader Jodi Bush, whose office has the lead for lynx.

Their plan now is to proceed with a species status assessment for Canada lynx, which will inform a recovery plan revision. That status assessment and recovery plan revision will then serve to satisfy our 5 year review obligation.

We definitely welcome state involvement in this process. I understand that Jodi sent a letter to the State fish and wildlife agencies of the lynx range states last fall to that effect, and I believe she said that she's planning to follow up with an update.

I would suggest you contact Jodi directly to confirm the process steps and timeline they have in mind and to discuss how you might be able to facilitate coordination between the Service and the interested States. Her email is Jodi_Bush@fws.gov. I'm on a plane now and don't have her phone number handy, but you can find it by going to the Region 6 web page and searching for the MT ES Field Office.

Thanks for your willingness to help us in this endeavor. -- GDF

On Tuesday, June 2, 2015, Jonathan Mawdsley <jmawdsley@fishwildlife.org> wrote:

Dear Gary,

I trust that this message finds you well. As discussed at the meeting of the AFWA Threatened and Endangered Species Policy Committee earlier this year, the fish and wildlife agencies in the range states for the Canada Lynx have expressed a strong

desire to be fully engaged in the status review for this species. Attached is a letter from AFWA Threatened and Endangered Species Policy Committee Chair Nick Wiley expressing this interest.

Many thanks in advance for your efforts to involve the state fish and wildlife agencies in the status review activities for Canada Lynx. If there is anything that I or others at AFWA can do to be of any assistance in helping to advance the review process, please do not hesitate to contact me.

With best regards,

Jonathan Mawdsley

Jonathan R. Mawdsley, Ph.D.

Fish and Wildlife Science Coordinator

Association of Fish and Wildlife Agencies

1100 First Street, NE, Suite 825

Washington, DC 20002 USA

Phone: (202) 838-3462

Cell: (202) 997-6628

Fax: (202) 350-9869

E-mail: jmawdsley@fishwildlife.org

Web: <http://www.fishwildlife.org>

--

Gary Frazer

Assistant Director -- Ecological Services

U.S. Fish and Wildlife Service

(202) 208-4646

From: [Jim Zelenak \(Google Docs\)](#)
To: mark_mccollough@fws.gov
Subject: Cardinal SSA ques... - Add: "Simons-Legaard completing lynx ...
Date: Friday, July 10, 2015 1:21:57 PM
Attachments: [logo.png](#)

Jim Zelenak replied to a suggestion on [Cardinal SSA questions_ Lynx_4_28_15 draft.docx](#)



Mark McCollough

Add: *"Simons-Legaard completing lynx habitat model for much of Maine in 2014."*



Jim Zelenak

2015, right?

You received this email because you are mentioned in this thread. [Change what Google Docs sends you.](#) You can reply to this email to reply to the discussion.

Google



U.S. Fish & Wildlife Service

The Species Status Assessment Framework

An Integrated Framework for Conservation

“The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday’s logic.”

– Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation’s species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species’ biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

“The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation.”

– Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

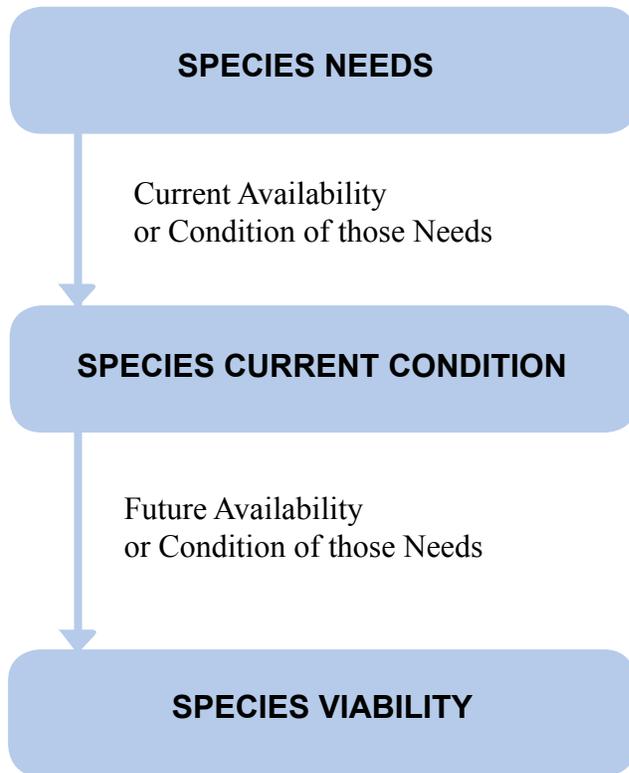
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

**U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171**

March 2014



Gunnison's prairie dog. Credit: USFWS

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FILE CODE

DATE, 2015

Dear **(Title)**:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director (NAME)

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in YOUR STATE. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact LOCAL NAME at (NUMBER) (EMAIL).

Sincerely,

NAME
TITLE

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathan Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ

United States Department of the Interior



Fish and Wildlife Service

Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339



In Reply Refer To:
FWS/R6/MTESO/Canada Lynx Status Assessment

July 1, 2015

Dear Director Hageners:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

Dear Director Hagener

2

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Montana. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Jim Zelenak at (406) 449-5225, extension 220 (jim_zelenak@fws.gov).

Sincerely,



Jodi Bush
Field Office Supervisor

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathon Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ

From: Bush, Jodi
To: [Peter Fasbender](mailto:Peter.Fasbender)
Cc: [Lisa Mandell](mailto:Lisa.Mandell); [Jim Zelenak](mailto:Jim.Zelenak); [Tamara Smith](mailto:Tamara.Smith); [Ann Belleman](mailto:Ann.Belleman)
Subject: Fwd: ATTENTION -NEEDS ACTION: Updated State Coordination Letter for Lynx
Date: Friday, July 10, 2015 3:24:03 PM
Attachments: [2015 06 25 LTR Bush_Hagener Lynx SSA Letter to States.pdf](#)
[2015 0701 TEMPLATE Lynx SSA Letter to States.docx](#)
[SSA Fact Sheet.pdf](#)

Peter.

I know you are already engaged in the Lynx Recovery Planning Process because of Minnesota's interest, However because of a high level of interest identified through AFWA and conversations with Gary Frazer, we have determined that **ALL STATES** within the range of the Lynx DPS should be updated on the status of where we are at with Lynx Recovery Planning. To that end we are asking that you also provide the attached letter and SSA fact sheet to our State counterparts in Wisconsin.

If you have unanswered questions about where we are in the process, please feel free to give me a call so I can catch you up. We also have internal coordination calls on the first Tuesday of every month. August 4th will be the next one from 10-11 MTN time. Thanks for your help. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
Date: Thu, Jul 9, 2015 at 11:42 AM
Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>
Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

From: [Parkin, Mary](#)
To: [Zelenak, Jim](#)
Subject: Re: next core team call
Date: Friday, July 10, 2015 3:50:04 PM

Thanks, Jim! I'll be happy to put this on the Google calendar as a bi-weekly recurring event.

Will also make the changes to the monthly call list (I know Krishna will appreciate it) and make sure both calls are on the calendar for the foreseeable future. Will do this and get invitations out today for next week's call.

Cheers,
Mary

On Fri, Jul 10, 2015 at 3:17 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi Mary,

Glad you caught that - we are scheduled for a Core Team call next Tuesday, July 14, 10-11 Mountain Time, but I see it is not on my calendar. I can't remember if I was supposed to get that perpetually on folks' schedules via Google calendar or if I was going to ask you to do so (because you are way better at google calendar than I am...).

We should have them lined up every month on the 2nd and 4th Tuesdays, probably for the next 3 years....

Also, for the monthly internal FWS lynx SSA coordination calls (larger FWS group), could you please:

1. Add those to Google calendar thru Dec. Every first Tues of the month (Aug. 4 is next, then Sept. 1, Oct. 6, Nov. 3, Dec. 1).
2. Remove Bridget Fahey, Krishna Gifford, Sarah Quamme, and Ben Conard from invitee list.
3. Add David Stilwell (NYFO), Ann Timberman (Western Colorado FO), Drue DeBerry (Acting CO State ES Supervisor), Scott Hicks (Mich. FO), Pete Fasbender and Lisa Mandell (Minn. FO and Wisc. FO), Wally Murphy (NMFO), Larry Christ (UTFO), and Eric Rickerson (WAFO).

Make sense?

Thanks Mary.

Jim

On Fri, Jul 10, 2015 at 2:44 PM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi Jim,

I think AL, and especially the return trip, scrambled my brains! I've been looking at my Google calendar and am blanking on when the next core team call is (even though you reminded me last Monday). Can you refresh my memory once again?

I was thinking of this right now because I'm responding to an email from Dave Smith (on another project) and was going to encourage him, and Jonathan and Jennifer, to try to

make the call.

Thanks, and have a great weekend!

Mary

--

Mary Parkin

Endangered Species Recovery Coordinator, Northeast Region

U.S. Fish and Wildlife Service, Hadley, MA

Remotely located in Escalante, Utah:

Mailing address PO Box 637, Escalante, UT 84726

Street address 145 North Center St, Escalante, UT 84726

Phone 617-417-3331

Email mary_parkin@fws.gov

--

Jim Zelenak, Biologist

U.S. Fish and Wildlife Service

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225 ext. 220

jim_zelenak@fws.gov

--

Mary Parkin

Endangered Species Recovery Coordinator, Northeast Region

U.S. Fish and Wildlife Service, Hadley, MA

Remotely located in Escalante, Utah:

Mailing address PO Box 637, Escalante, UT 84726

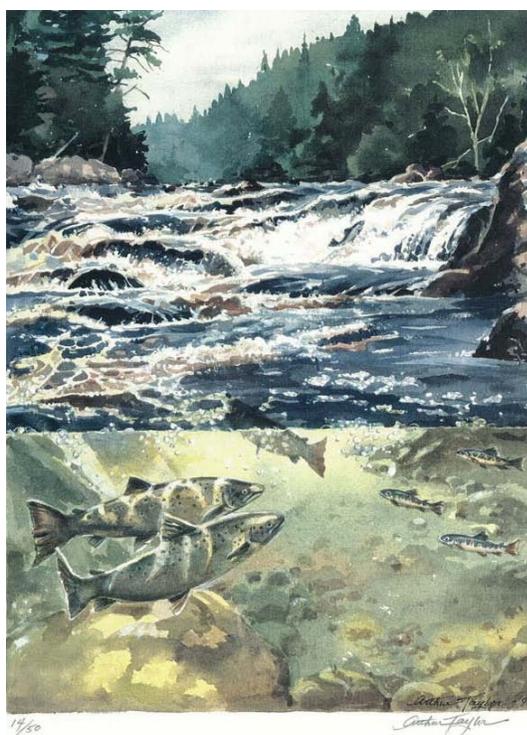
Street address 145 North Center St, Escalante, UT 84726

Phone 617-417-3331

Email mary_parkin@fws.gov

Recovery Plan for the Gulf of Maine Distinct Population Segment of Atlantic Salmon (*Salmo salar*)

DRAFT: JUNE 30, 2015



U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service



U.S. Department of Interior
Fish and Wildlife Service
Ecological Services and Fisheries

Recovery Plan for the
Gulf of Maine Distinct Population Segment of
Atlantic Salmon (*Salmo salar*)

Approved: _____
Regional Director, Northeast Region
U.S. Fish and Wildlife Service
Hadley, Massachusetts

Date: _____

Approved: _____
Assistant Administrator for Fisheries
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Silver Spring, Maryland

Date: _____

PREFACE

This Recovery plan has been developed pursuant to the Endangered Species Act of 1973. It's important to note that this document is accompanied by a [website](#) that contains detailed supplementary information.

The Endangered Species Act of 1973, as amended (16 USC 1531 et seq.) (ESA), establishes policies and procedures for identifying, listing, and protecting species of wildlife and plants that are endangered or threatened with extinction. The purposes of the ESA are “to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species...” The ESA defines an endangered species as “any species which is in danger of extinction throughout all or a significant portion of its range.” A threatened species is defined as “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”

The Gulf of Maine (GOM) distinct population segment (DPS) of Atlantic salmon was originally listed as endangered in December 2000 (65 FR 69459). That DPS encompassed salmon populations in small river systems along the Maine coast. Subsequently, significant new information led to expansion of the GOM DPS to include, in addition to the coastal rivers, populations in larger river systems covering a larger geographic area. The final rule for this expanded DPS was published in June 2009 (74 FR 29344).

The Secretaries of the Department of the Interior and the Department of Commerce are responsible for administering ESA provisions as they apply to GOM DPS of Atlantic salmon. Management authority for endangered and threatened species under the Departments' jurisdictions has been delegated to the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA). These agencies, collectively referred to as the Services, share Federal jurisdiction for Gulf of Maine Atlantic salmon, with USFWS having lead responsibility primarily for freshwater habitat and NOAA having lead responsibility primarily for the estuary and marine environments and for dams.

To help identify and guide recovery needs for listed species, section 4(f) of the ESA directs the Secretaries to develop and implement recovery plans for listed species. A recovery plan must include (1) a description of site-specific management actions necessary to conserve the species; (2) objective, measurable criteria that, when met, will allow the species to be removed from the endangered and threatened species list; and (3) estimates of the time and funding required to achieve the plan's goals.

This recovery plan for the GOM DPS of Atlantic salmon specifically addresses the planning requirements of the ESA and presents a recovery strategy based on the species' needs and those current threats and conservation accomplishments that affect its long-term viability. It is important to note that this recovery plan wholly supersedes the recovery plan that was approved in 2005 and pertained to the GOM DPS described in the 2000 listing. This document addresses

the expanded DPS listed in 2009 and is considered to be the initial recovery plan for the currently listed entity.

Draft recovery plans are subject to public review, and comments received during the review period are considered during preparation of the final plan. Scientific assessments and supporting information are accessible for informational purposes but are not subject to formal public review.

GUIDE TO PLAN

This document represents a departure from the 2005 recovery plan for the Gulf of Maine DPS of Atlantic salmon in that it does not include detailed background information or short-term implementation details. Rather, the plan focuses on the required statutory requirements of the ESA, including recovery criteria, recovery actions, and time and cost estimates. It also provides relevant supporting information and guiding principles for the Atlantic salmon recovery program. More in-depth scientific information and analyses, as well as more specific implementation activities, are contained in other documents made available on the [Atlantic salmon Web site](#) (see Box 1 below). Hyperlinks to specific Web pages are provided throughout this plan. Note also that technical and management terms are defined in a [glossary](#) provided on Web site.

The major sections of this plan include:

Part I. **Introduction**, which describes the listed entity and governance structure for recovery and summarizes the threats and conservation measures that affect the current status of the DPS

Part II. **Recovery Strategy**, which lays out the long-term guiding principles for the criteria and actions that comprise the GOM DPS recovery program

Part III. **Recovery Goals, Objectives, and Criteria**

Part IV. **Recovery Actions**, describing the broad, long-term actions needed to meet recovery criteria and general implementation responsibilities

Part V. **Time and Cost Estimates** for achieving the ESA delisting goal

Box 1. SIGNIFICANT CHANGES BETWEEN THIS PLAN AND THE 2005 RECOVERY PLAN

- This recovery plan addresses the expanded range of the GOM DPS of Atlantic salmon described in the 2009 listing rule (June 19, 2009: 74 FR 29344).
- This plan reflects a new recovery planning approach (termed the Recovery Enhancement Vision, or REV) being adopted by the U.S. Fish and Wildlife Service. REV plans focus on the statutory elements of recovery criteria, recovery actions, and time and cost estimates.
- Details about biology and threats, and other supporting documentation are referenced in this document and can be accessed at the [Atlantic Salmon Restoration Web site](#).
- A long-term implementation strategy and DPS-wide recovery actions are identified in this plan, while management activities that are geographically-specific and short-term can be found in the Salmon Habitat Recovery Unit (SHRU Plans) posted on the [Atlantic Salmon Restoration Web site](#).

DISCLAIMER

Recovery plans describe actions that are thought to be necessary to recover and/or protect endangered or threatened species. This recovery plan for the GOM DPS of Atlantic salmon (*Salmo salar*) was prepared by the USFWS in cooperation with, and with major contributions from, NOAA Fisheries.

Recovery plans are neither regulatory nor decision documents; rather, they are technical advisory documents that provide recommendations to achieve stated recovery objectives. Objectives will be attained and funds expended contingent upon appropriations, priorities, and other budgetary constraints. Nothing in this plan should be construed as a requirement that any Federal agency obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S. C. 1341, or any other law or regulation.

Recovery plans do not necessarily represent the views or the official position or approval of any individuals or agencies other than the USFWS and NOAA. This plan will represent the official position of the USFWS and NOAA only after it has been approved by Northeast Regional Director for the USFWS and the Assistant Administrator for NOAA Fisheries. Approved recovery plans are subject to modification as dictated by new findings, changes in species status, and completion of recovery actions.

Literature citations should read as follows:

U.S. Fish and Wildlife Service and NOAA Fisheries. 2015. Draft recovery plan for the Gulf of Maine Distinct Population Segment of Atlantic salmon (*Salmo salar*). 64 pp.

Review copies of this draft recovery plan can be downloaded via the Internet at:

<http://www.fws.gov/northeast/EcologicalServices/recovery.html>

or

http://www.nero.noaa.gov/prot_res/altsalmon

ACKNOWLEDGMENTS

The foremost intent of this recovery plan is to provide recovery goals and objectives toward which all stakeholders can cooperatively work. This plan builds on the significant body of published work and expert knowledge regarding Atlantic salmon and other diadromous species.

Many individuals have contributed to the collaborative development of this draft plan. Current writing team members Dan Kircheis, Peter Lamothe, Mary Parkin, and Laury Zicari have worked from a draft authored by William Ardren. In addition, the following individuals have made substantial contributions to the plan: Alex Abbott, Bill Archambault, Ernie Atkinson, Mike Bailey, Meredith Bartron, Dave Bean, Antonio Bentivoglio, Colby Bruchs, Steve Coghlan, Mary Colligan, Scott Craig, Paul Christman, Oliver Cox, Kim Damon-Randall, Rob Dudley, Kayla Easler, Stewart Fefer, Jaime Geiger, Clayton Hawkes, Chris Holbrook, Bob Houston, Ted Koch, John Kocik, Steve Koenig, Ben Letcher, Trent Liebech, Greg Mackey, Wende Mahaney, Mark McCollough, Steve McCormick, Mike Millard, Martin Miller, Slade Moore, Katrina Mueller, Lori Nordstrom, Paul Phifer, Peter Ruksznis, Paul Santavy, Rory Saunders, Fred Seavey, Tim Sheehan, Steve Shepard, Randy Spencer, John Sweka, Joan Trial, Tara Trinko Lake, Jed Wright, and Joe Zydlewski.

Special thanks go to Ruth Taylor and Ed Baum for providing the copyrights for the use of Arthur Taylor's "Coming Home" painting as the cover art for this recovery plan.

Finally, this plan is dedicated to the treasured memory of Melissa Laser, Clem Fay, Joris Naiman, and Barbara Arter and their outstanding contributions to Atlantic salmon recovery in Maine. The accomplishments of Melissa and Clem have been noted in previous documents and are an inspiration for current and future conservation efforts needed to recover this endangered species. Here, we would like to elaborate on those most recently lost, Joris and Barbara.

Joris Naiman was the Department of Interior Solicitor who spent countless hours reviewing both the original Atlantic salmon recovery plan and, for as long as he could sustain his energy, this draft plan. He cared greatly that we, as Federal servants, adhere to both the letter and the spirit of the Endangered Species Act. Although his intellect was his defining feature, he had a sense of adventure that included flying helicopters. Joris never hesitated to point out flaws in logic or to delve deeply into the meaning of how we proposed to recover salmon in the Gulf of Maine DPS. He was a major force in ensuring the integrity of recovery plans, a legacy that we hope we have carried forward in this draft plan.

Barbara Arter was a conservationist and avid fly fisher who worked tirelessly as a volunteer, teacher, and consultant to advocate and promote the conservation of natural resources in Maine. She was never afraid to ask the tough questions, and always with a smile. As a conservation planner, she was diligent and thorough in her investigations. She made significant contributions to the Atlantic salmon program in writing watershed management plans, facilitating project oriented workshops and meetings, and, more recently, serving as the Science Information Coordinator for the Diadromous Species Research and Restoration Network. Barbara's determination, insights, abilities, personality, and laughter will be greatly missed by all those fortunate enough to have worked with her.

EXECUTIVE SUMMARY

After originally listing the Gulf of Maine (GOM) Distinct Population Segment (DPS) of Atlantic salmon as endangered in December 2000 and publishing a recovery plan in November 2005, the U.S. Fish and Wildlife Service (USFWS) and NOAA's (NOAA) National Marine Fisheries Service (jointly, the Services) conducted a second status review and listed an expanded GOM DPS on June 19, 2009. The expanded DPS includes all anadromous Atlantic salmon in a freshwater range covering in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River. The listing includes all associated conservation hatchery populations used to supplement these natural populations. Concurrently with the new listing, critical habitat was designated within the range of the expanded GOM DPS. This recovery plan revises the original plan, published in 2005, to cover the expanded DPS and account for new information.

RECOVERY PLANNING APPROACH: This recovery plan is based upon a planning approach recently endorsed by USFWS and, for this plan, by NOAA. The new approach, termed the Recovery Enhancement Vision, focuses on the four statutory requirements in the Endangered Species Acts of 1973, as amended, including site-specific recovery actions; objective, measurable criteria for delisting; the time estimate to delisting, and the cost estimate for full recovery. This plan also goes beyond the statutory requirements to provide relevant background information for understanding the rationale for the recovery criteria and actions; this information includes a summary of the governance structure, threats, past and current conservation measures, and recovery strategy for the DPS. Importantly, the full body of relevant data and analyses, as well as other relevant information, are posted on the [Atlantic Salmon Restoration Website](#). Links to specific Web pages are provided throughout this plan.

RECOVERY UNITS: Recovery units for the expanded DPS were delineated in the 2009 critical habitat rule. These units, designated as Salmon Habitat Recovery Units (SHRUs), respond to life history needs and the environmental variation associated with freshwater habitats. The SHRUs encompass the full range of the DPS, including:

- Merrymeeting Bay, which covers the Androscoggin and Kennebec, and extends east to include the Sheepscot, Pemaquid, Medomak, and St. George watersheds
- Penobscot Bay, which covers the entire Penobscot basin and extends west to and includes the Ducktrap watershed
- Downeast, including all coastal watersheds from the Union River east to the Dennys River

THREATS TO THE DPS: This plan includes an updated threats analysis for the expanded GOM DPS. The 2009 listing rule called particular attention to three major threats to Atlantic salmon: dams, regulatory mechanisms related to dams, and marine survival. In addition, a number of secondary threats were identified, including habitat quality and accessibility, commercial and recreational fisheries, disease and predation, inadequacy of regulatory mechanisms related to water withdrawal and water quality, aquaculture, artificial propagation,

climate change, competition, and depleted diadromous fish communities. In their entirety, these stressors were deemed a fourth major threat. Since listing, our understanding of threats to the DPS has continued to grow. New and emerging threats, all of which are considered to constitute significant impediments to recovery, include road stream crossings that impede fish passage, international intercept fisheries, and the effects of climate change. It is important to note that as recovery proceeds, information and the level of concern about various threats will continue to evolve.

RECOVERY STRATEGY: This recovery plan is based on two premises: first, that recovery must focus on rivers and estuaries located in the GOM DPS until we better understand threats in the marine environment, and, second, that survival of Atlantic salmon in the GOM DPS will be dependent on conservation hatcheries throughout much of the recovery process. In addition, the scientific foundation for this plan includes conservation biology principles regarding population viability, our understanding of freshwater habitat viability, and threats abatement needs.

Other components of the recovery strategy include adaptive management, phasing of recovery actions, a geographic framework based upon the three SHRUs as well as rangewide actions, and a collaborative approach that focuses on full inclusion of partners in implementing recovery actions. This recovery plan includes a table that generally identifies the priority, timing, and involved parties for the various actions, but it is important to recognize that annual decisions made about recovery priorities will both tier down from this plan and be formulated in SHRU-based workplans.

RECOVERY GOAL: The overall goal of this recovery plan is to remove the GOM DPS of Atlantic salmon from the Federal List of Endangered and Threatened Wildlife. The interim goal is to reclassify the DPS from endangered to threatened status.

RECOVERY OBJECTIVES AND CRITERIA: The objectives and criteria in this plan address biological recovery needs as well as threats identified in the 2009 listing rule and newly emerging threats.

Reclassification Objectives – Maintain sustainable, naturally reared populations with access to sufficient suitable habitat in each SHRU, and ensure that management options for marine survival are better understood. In addition, reduce or eliminate those threats that either individually or in combination pose a risk of imminent extinction to the DPS.

Delisting Objectives – Maintain self-sustaining, wild populations with access to sufficient suitable habitat in each SHRU, and ensure that necessary management options for marine survival are in place. In addition, reduce or eliminate all threats that either individually or in combination pose a risk of endangerment to the DPS.

Biological Reclassification Criteria – Reclassification of the GOM DPS from endangered to threatened will be considered when *all* of the following criteria are met:

1. The DPS has a total annual escapement of at least 1,500 naturally reared adults spawning in the wild, with at least 2 of the 3 SHRUs having at least 500 naturally reared adults.

2. Each SHRU has a population growth rate of greater than 1.0 in the 10-year period preceding reclassification.
3. Adults originating from hatchery-stocked eggs, fry, and parr are included when estimating population growth rates.
4. Sufficient suitable spawning and rearing habitat for the offspring of the 1,500 naturally reared adults is accessible and distributed throughout designated Atlantic salmon critical habitat, with at least 7,500 accessible and suitable habitat units (HUs) in each SHRU, located according to the known and potential migratory patterns of returning salmon.

Biological Delisting Criteria – Delisting of the GOM DPS will be considered when *all* of the following criteria are met:

1. The DPS has a self-sustaining annual escapement of at least 2,000 wild adults in each SHRU, for a DPS-wide total of at least 6,000 wild adults.
2. Each SHRU has a population growth rate of greater than 1.0 in the 10-year period preceding delisting, and, at the time of delisting, the DPS demonstrates self-sustaining persistence.
3. Sufficient suitable spawning and rearing habitat for the offspring of the 6,000 wild adults is accessible and distributed throughout the designated Atlantic salmon critical habitat, with at least 30,000 accessible and suitable HUs in each SHRU, located according to the known migratory patterns of returning wild adult salmon.

Threats Abatement Criteria: Threats to GOM DPS identified both in the 2009 listing rule and since then must be diminished prior to reclassification and, to a greater extent, delisting. Therefore, this plan includes criteria specific to reducing threats to the survival and recovery of the species. As noted above, each individual primary threat must be sufficiently abated according to stated criteria, although consideration of which threats are primary may change over time. In addition, an implementation strategy for making tradeoffs among responses to secondary threats that will allow a sufficient reduction in extinction risk will be developed as the recovery process advances. To facilitate such a strategy, the adaptive management and collaborative aspects of the Recovery Strategy will come into play. Overall, threats monitoring and relevant research will be critical to determine to what extent secondary threats must be resolved in association with abatement of primary threats. Numerous criteria for abating both primary and secondary threats are detailed in the body of the recovery plan.

RECOVERY ACTIONS: This recovery plan focuses on the broad actions necessary to recover the GOM DPS of Atlantic salmon. These actions address both short-term and long-term survival and recovery needs. Shorter-term actions will be further specified in SHRU-based workplans in conjunction with rangewide research and genetics management workplans. The six broad categories of recovery actions include:

- **Habitat Connectivity**, intended to enhance connectivity between the ocean and freshwater habitats important for salmon recovery.
- **Genetic Diversity**, intended to maintain the genetic diversity of Atlantic salmon populations over time.
- **Conservation Hatchery**, intended to increase adult spawners through the conservation hatchery program.

- **Freshwater Conservation**, intended to increase adult spawners through the freshwater production of smolts.
- **Marine and Estuary**, intended to increase survival in these habitats by increasing understanding of these salmon ecosystems and identifying the location and timing of constraints to the marine productivity of salmon in support of management actions to improve survival.
- **Outreach, Education, and Engagement**, intended to collaborate with partners and engage interested parties in recovery efforts for the GOM DPS.

ESTIMATED TIME TO RECOVERY: A 75-year timeframe is projected to achieve delisting of the Gulf of Maine DPS of Atlantic salmon. This accounts for approximately 15 generations of salmon and assumes an estimated upper limit for resource investment into implementation of recovery actions.

TOTAL ESTIMATED COST OF RECOVERY: The total cost of recovery over 75 years is roughly estimated to be \$351,070,000.

TABLE OF CONTENTS

PART I. INTRODUCTION.....	1
A. Listed Entity and Recovery Units	1
1. Gulf of Maine Distinct Population Segment of Atlantic Salmon	1
2. Atlantic Salmon Recovery Units	3
B. Overview of Recovery Governance and Coordination	4
1. Recovery Governance Structure	4
2. Tribal Coordination and Collaboration	5
D. Threats to Species Viability	6
1. Threats Identified at Time of Listing	6
2. New and Emerging Threats	9
C. Historical and Contemporary Conservation Measures	10
PART II. RECOVERY STRATEGY	13
A. Foundation	13
1. Conservation Frameworks	13
2. Conservation Assessments	13
B. Adaptive Strategy.....	15
C. Phased Approach	16
D. Geographic Framework	17
E. Coordination and Collaboration.....	17
1. DPS-wide Recovery Implementation Strategy	17
2. SHRU-level Workplans	17
PART III. RECOVERY GOALS, OBJECTIVES, AND CRITERIA.....	19
A. Recovery Goals.....	19
B. Recovery Objectives	19
1. Reclassification Objectives.....	19
2. Delisting Objectives.....	19
C. Recovery Criteria	20
1. Biological Criteria.....	20
2. Threats-abatement Criteria.....	21
D. Evaluating Recovery Progress	26

PART IV. RECOVERY ACTIONS	27
A. Recovery Actions	27
B. Action Implementation	39
PART V. TIME AND COST ESTIMATES	48
A. Time to Delisting	48
B. Cost of Recovery	48
PART VI. LITERATURE CITED	49
APPENDIX: LIST OF POSTED SUPPORTING MATERIALS	51

BOXES, FIGURES, AND TABLES

Box 1. Significant Changes Reflected in Plan	iv
Box 2. Five Listing Factors under the ESA	6
Box 3. Recovery Action Priority Numbers	39
Figure 1. Freshwater range of Atlantic salmon in the United States	1
Figure 2. Geographic range of the Gulf of Maine DPS	2
Figure 3. Salmon Habitat Recovery Units within the Gulf of Maine DPS	3
Table 1. DPS-wide Implementation Table	40

PART I. INTRODUCTION

A. Listed Entity and Recovery Units

1. Gulf of Maine Distinct Population Segment of Atlantic Salmon

Atlantic salmon populations in the United States have been grouped into the Long Island Sound, Central New England, and Gulf of Maine population segments (figure 1, Fay et. al 2006). Under the Endangered Species Act (ESA), a distinct population segment of a vertebrate species is treated as a species for listing and recovery purposes if it meets the qualifying criteria defined by the joint Distinct Population Segment (DPS) policy of 1996 (61 FR 4722). This policy lays out three criteria, all of which must be met before a population segment can be listed as a DPS. These criteria include, first, the discreteness of the population segment in relation to the remainder of the species to which it belongs; second, the significance of the population segment to the species to which it belongs; and, third, the population segment's conservation status in relation to the ESA's standards for listing as endangered or threatened.



Figure 1. Freshwater range of Atlantic salmon in the United States. Rivers are grouped into three population segments. Only rivers in the Gulf of Maine currently support wild populations of Atlantic salmon.

In the Long Island Sound and Central New England population segments, all native Atlantic salmon populations have been extirpated. As of 2014, nonnative Atlantic salmon were still present in the Central New England population segment because of a 40-plus-year reintroduction program in the Connecticut and Merrimack Rivers. But in 2013 those programs were discontinued, and only a legacy program continues that is believed not to be sufficient to maintain salmon runs in Central New England. Only the Gulf of Maine (GOM) Population Segment supports native wild salmon populations, all of which are at extremely low population size, leading to the designation of this population segment as a DPS.

The GOM DPS of Atlantic salmon was first listed by the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (collectively referred to as the Services) as endangered under the ESA in 2000 (65 FR 69469). The 2000 GOM DPS included all naturally reproducing remnant populations of Atlantic salmon from the Kennebec River downstream of the former Edwards Dam site, northward to the mouth of the St. Croix River. At the time of the 2000 listing, however, there were uncertainties associated with biological and genetic relationships of Atlantic salmon inhabiting the Androscoggin River, Kennebec River, and Penobscot River to wild Atlantic salmon populations (figure 2).

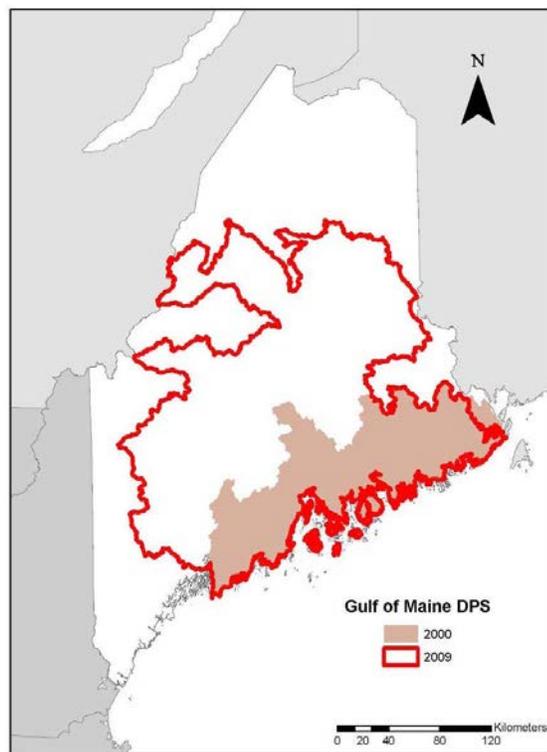


Figure 2. Geographic range of the Gulf of Maine Distinct Population Segment (DPS) as defined in the 2000 and 2009 listing rules.

A subsequent status review by Fay et al. (2006) recommended that the GOM DPS be expanded to include all naturally reproducing anadromous Atlantic salmon having a freshwater range in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River, including all associated conservation hatchery populations used to supplement these natural populations. The marine range, which remained unchanged, extends from the GOM throughout the Northwest Atlantic Ocean to the coast of Greenland. The USFWS and NOAA jointly listed this expanded GOM DPS as endangered on June 19, 2009 (74 FR 29344), based largely on the information summarized by Fay et al. (2006).

2. Atlantic Salmon Recovery Units

In considering recovery needs for the GOM DPS at the time of the 2009 listing, we identified the geographic and population-level factors that would buffer the DPS from adverse demographic and environmental events. This included the fundamental need to ensure that Atlantic salmon are well distributed across their Gulf of Maine range to accommodate metapopulation dynamics. To address life history characteristics as well as demographic and environmental variation, a geographic framework represented by three SHRUs within the DPS was established (figure 3; also see NOAA 2009, appendix A).



Figure 3. Salmon Habitat Recovery Units within the Gulf of Maine Distinct Population Segment, as defined in the 2009 critical habitat rule.

The three SHRUs delineated for the Gulf of Maine Atlantic salmon DPS are the

- Merrymeeting Bay SHRU – Incorporates two large basins, the Androscoggin and Kennebec, and extends east to include the Sheepscot, Pemaquid, Medomak, and St. George watersheds
- Penobscot Bay SHRU – Includes the entire Penobscot basin and extends west to include the Ducktrap watershed
- Downeast Coastal SHRU – Includes all coastal watersheds from the Union River east to the Dennys River

B. Overview of Recovery Governance and Coordination

1. Recovery Governance Structure

Recovery of the GOM DPS requires coordination of numerous conservation planning and management efforts across the entire DPS. An effective [governance structure](#) is key to charting a comprehensive long-term recovery program that facilitates interagency and intergovernmental cooperation along with the strategic involvement of a full range of partners and interested parties.

The USFWS, NOAA, Maine Department of Marine Resources (MDMR), and Penobscot Indian Nation (PIN) share a stewardship interest and governmental responsibility for recovering Atlantic salmon. A governance structure has been established to facilitate coordination among these entities.

The current governance structure, which is subject to change, includes an Action Team for each major recovery program element, an Atlantic salmon Policy Board, and an Atlantic salmon Management Board. The Action Teams develop implementation plans, review and approve project proposals, identify and resolve areas of policy or scientific disagreement, and coordinate to implement and monitor recovery actions. The Policy Board guides broad policy direction, annually reaffirms program priorities, and commits resources for recovery implementation. The Management Board provides updates on potential and real changes to resource commitments and resolves differences of priorities among Action Teams.

The USFWS, NOAA, MDMR, and PIN cannot recover the GOM DPS of Atlantic salmon without broader participation. The governance structure is therefore intended not only to guide recovery efforts among the government entities but to engage other partners in the salmon recovery program, including governmental agencies, nongovernmental organizations (NGOs), commercial and recreational interests, and the general public. Types of recovery actions that NGOs and other partners have implemented to date include dam removals, passage improvements at road stream crossings, hatchery production of fry, fry stocking, parr stocking and land conservation and protection. Collaboration, local initiatives, public involvement and support, monitoring, and adaptive management will continue to be essential to this recovery effort.

The governance structure has several stated purposes, including

- Ensuring that recovery of the Gulf of Maine DPS is achieved in a manner that is transparent and easily understood in terms of roles and responsibilities of the government entities
- Ensuring that the best available science is being integrated into recovery
- Ensuring that resources are made available to implement recommended actions in any given funding cycle
- Resolving disputes and ensure continuity of operations throughout the operational year
- Ensuring effective communication among the agencies and the various organizational levels within the agencies
- Ensuring effective communication among the agencies and their partners in recovery, including NGOs, commercial and recreational interests and the general public
- Ensuring that the trust responsibilities of the Federal agencies to federally recognized Tribes are appropriately exercised
- Ensuring that those proposals requesting agency resources are vetted and determined to be consistent with agency policies and available resources (see [proposal review process](#))

Atlantic salmon recovery is also guided by multi-agency, issue-specific documents, interagency agreements, and international cooperative efforts. The value of these [guidance documents](#) is in no way diminished by completion of a recovery plan, and they will continue to provide important technical guidance for recovery actions.

Given our Federal trust responsibilities with regard to tribal consultation, we provide more detail below on coordination with Maine Tribes relative to Atlantic salmon recovery.

2. [Tribal Coordination and Collaboration](#)

In Maine, the Wabanaki people represent four Tribes: the Passamaquoddy Tribe in Washington County, the Penobscot Indian Nation based at Indian Island on the Penobscot River, the Houlton Band of Maliseets in Northern Maine, and the Aroostook Band of Micmacs also in Northern Maine. Atlantic salmon and the suite of diadromous fish indigenous to Maine's rivers, streams, lakes and ponds are of great cultural importance to these Tribes for religious/cultural ceremonies, subsistence, and commerce, all of which have been negatively affected by the decline of Atlantic salmon. Up through 1988¹, the PIN harvested Atlantic salmon for sustenance; since then, however, the Tribe has voluntarily abstained from harvesting Atlantic salmon out of concern for the health of the species. The Passamaquoddy Tribe and PIN also hold lands containing habitat that is critical to the survival and recovery of Atlantic salmon. As a result, the working relationship between the Services, the State of Maine, and the Tribes is crucial to the recovery of Atlantic salmon.

¹ Two salmon were harvested for ceremonial purposes in 1988 by tribal members; see 50 CFR 29344.

The Penobscot Nation, along with the Services and Maine's Department of Marine Resources, are co-participants in the management of Atlantic salmon. The Tribe has member participation on Atlantic salmon Action Teams, the Atlantic salmon Policy Board, and the Atlantic salmon Management Board. Beyond the Management Board, the Services are committed to working with all Tribes in Maine in managing Atlantic salmon while finding ways to best achieve the fisheries needs of the Tribes.

D. Threats to Species Viability

1. Threats Identified at Time of Listing

This section summarizes the primary and secondary threats—described according to the ESA's five listing factors—upon which the 2009 rule for the Atlantic salmon GOM DPS was based (74 FR 29344), and which continue to affect its survival and recovery.

Box 2. FIVE LISTING FACTORS UNDER THE ESA (§4(a)(1))

A species is listed when it is determined to be endangered or threatened because of any of the following factors:

- (A) the present or threatened destruction, modification, or curtailment of its habitat or range
- (B) overutilization for commercial, recreational, scientific, or educational purposes
- (C) disease or predation
- (D) the inadequacy of existing regulatory mechanisms
- (E) other natural or manmade factors affecting its survival

These factors must also be evaluated when reclassifying or delisting any listed species.

The 2009 listing rule highlighted the following three threats as the most significant factors in the decline of Atlantic salmon in Maine:

Significant Listing Factors

Dams (Factor A)

Dams significantly impede migration pathways and increase direct and indirect mortality of Atlantic salmon. Dams within the range of the GOM DPS impede access to much of the suitable habitat that was historically available. Hydroelectric turbines also cause significant mortality to kelts and smolts as they migrate past dams on their journeys to the ocean. Dams also create impoundments that inundate formerly free-flowing rivers, reduce water quality, and change fish

and other aquatic species' community composition; delay migration of smolts and adults; change thermal regimes; alter natural flow regimes; and negatively affect diadromous fish upon which salmon depend.

Inadequate regulatory mechanisms related to dams (Factor D)

Inadequacy of regulatory mechanisms is a concern for both hydroelectric and non-hydroelectric dams within the GOM DPS, in terms of providing fish passage necessary for Atlantic salmon survival. Many of the Federal Energy Regulatory Commission's rulings and regulations and State policies and regulations have proved to be ineffective or were not adopted. Most dams within the range of the DPS do not generate electricity and are typically small and do not have fish passage, and many are no longer in use.

Marine survival (Factor E)

Survival of GOM DPS salmon in their marine environment has declined over the last 25 years. Continued low marine survival rates for U.S. stocks of Atlantic salmon can be attributed to four general sources (direct and indirect): predation, starvation, diseases and parasites, and abiotic factors such as changing ocean conditions. Overall, marine survival is poor throughout the Atlantic Ocean and is heavily influenced by both nearshore and open ocean survival rates. Current investigations of mortality integrate the four mortality factors and, if applicable, fishing mortality. Much more information, analysis, and research are needed to achieve a clearer picture of marine survival and what actions can be taken to increase survival rates.

Secondary Listing Factors

The 2009 rule also mentioned a number of secondary stressors that collectively threaten the continued existence of the GOM DPS of Atlantic salmon; these are summarized below.

Habitat Complexity (Factor A)

Some forest, agricultural, and other land use practices have reduced habitat complexity within the GOM DPS. Historic timber harvest practices reduced the abundance and diversity of large wood and large boulders from many rivers. Large wood is important for Atlantic salmon during several life history stages. Survival of salmon fry has been correlated with the availability of low-velocity microhabitats, while older juveniles use large wood for stream cover, particularly during winter. In general, large wood may increase overwinter survival by increasing habitat complexity.

Water Quantity (Factor A)

Direct water withdrawals and groundwater withdrawals for crop irrigation and commercial, and public use can directly impact Atlantic salmon habitat by depleting stream flow. Reduced stream flow can reduce the quantity of habitat, increase water temperature, and reduce dissolved oxygen. The cumulative effects of individual water withdrawal impacts on Maine rivers is poorly understood; however, it is known that adequate water supply and quality is essential to all life stages and life history behaviors of Atlantic salmon, including adult migration, spawning, fry emergence, and smolt emigration.

Water Quality (Factor A)

Maine's water quality classification system provides for different water quality standards for different classes of water. These standards were not developed specifically for Atlantic salmon, and the lower quality standard classes may not provide high enough water quality to protect all life stages of Atlantic salmon; many Atlantic salmon are found in these areas. Atlantic salmon may also be impacted by degraded water quality caused by point and non-point source discharges.

Fish Harvest (Factor B)

Intercept fisheries, by-catch in recreational fisheries, and poaching result in direct mortality or cause stress, thus reducing reproductive success and survival of Atlantic salmon. Although international commercial harvest has been highly restricted since 2002, this issue has re-emerged as a growing concern (see New and Emerging Threats below). Recreational angling of many freshwater species occurs throughout the range of the GOM DPS, and the potential exists for the incidental capture and misidentification of both juvenile and adult Atlantic salmon. Direct or indirect mortality may result even in fish that are released as a result of injury or stress.

Disease outbreaks (Factor C)

Disease outbreaks, whether occurring in the natural or hatchery environment, have the potential to cause negative population-wide effects. Atlantic salmon are susceptible to numerous bacterial, viral, and fungal diseases. Parasites can also affect salmon. Federally managed conservation hatcheries adhere to rigorous disease prevention protocols and management regulations designed to prevent the introduction of pathogens into the natural and hatchery environments; prevent and control, as necessary, disease outbreaks in hatchery populations; and prevent the inadvertent spread of pathogens between facilities and river systems.

Predation (Factor C)

The impact of predation on the GOM DPS is important because of the imbalance between the very low numbers of adults returning to spawn and the increase in population levels of both native and nonnative predators. Increased levels of predators combined with decreased abundance of alternative prey sources has likely increased predation mortality on juvenile Atlantic salmon, especially at the smolt life stage.

Depleted Diadromous Communities (Factor E)

Damming rivers, thus preventing migration to former spawning grounds, was a major factor in the decline of Atlantic salmon, and much of the coevolved suite of diadromous fish. Many coevolved diadromous species have experienced dramatic declines throughout their ranges, and current abundance indices are fractions of historical levels. The dramatic decline in diadromous species has negative impacts on Atlantic salmon populations, including depletion of an alternative food source for predators of salmon, serving as food for juvenile and adult salmon, nutrient cycling, and habitat conditioning. These impacts may be contributing to decreased survival in lower river and estuarine areas; further, although the impacts do not occur in the open ocean, the demographic impact to the species occurs after smolt emigration, and is thus a component of the marine survival regime.

Artificial Propagation (Factor E)

The conservation hatchery programs at Craig Brook and Green Lake National Fish Hatcheries (CBNFH and GLNFH) are vital to preserving individual and composite genetic stocks until freshwater and marine conditions improve, allowing for greater abundance of wild salmon. Without hatchery production, the likelihood of imminent extinction would be substantially higher, and it is also important to know that hatchery salmon are protected as part of the GOM DPS. Nonetheless, inherent risks associated with the broodstock and stocking program for the DPS include domestication and loss of genetic variability, along with the potential for catastrophic loss due to the limited number of hatcheries maintaining GOM DPS Atlantic salmon. To mitigate these risks, a broodstock management plan has been implemented, with the goal of maintaining genetic diversity throughout the hatchery management process, including estimating genetic diversity for each captive broodstock.

Aquaculture (Factor E)

Concerns about aquaculture continue, including the risk of exposing native salmon to serious salmon pathogens and genetic and ecological risks. Although recent advances in containment and marking of aquaculture fish offer more control over the potential for negative impacts, they do not eliminate the risk aquaculture fish pose to wild Atlantic salmon.

Competition (Factor E)

Prior to 1800, the resident riverine fish communities in Maine were made up of native species; today, Atlantic salmon coexist with a diverse array of nonnative resident fishes, including brown trout, largemouth bass, smallmouth bass, and northern pike. The range expansion of these nonnative species is of particular concern, because they often require similar resources and can exclude salmon from preferred habitats, reduce food availability, and increase predation.

2. New and Emerging Threats

In addition to the threats identified at the time of listing, two stressors have additional information indicating growing concern in terms of their effects on Atlantic salmon in the Gulf of Maine: (1) The barriers to fish passage caused by culverts and other road stream crossings, and (2) climate change. Both of these threats are considered to be significant factors affecting the DPS.

Road Stream Crossings (Factor A)

Together with dams, lack of access to suitable freshwater habitat due to road stream crossings has become a major concern with regard to recovery of the GOM DPS of Atlantic salmon. The amount of accessible freshwater habitat is a fraction of historical levels; this was initially caused by building dams and later by road stream crossings that created barriers to upstream migration. Fish passage barriers continue to prevent fish from reaching essential spawning and rearing habitat. These barriers also impair ecological complexity and increase the salmon's vulnerability to higher rates of extinction from demographic, environmental, and genetic stochasticity.

Intercept Fisheries (Factor B)

International intercept fisheries may be impacting the GOM DPS salmon. The Greenland fishery issue has become a more significant concern with regard to salmon originating in the United

States. Since 2002, ICES has advised that there should be no fishery for Atlantic salmon off West Greenland given the precarious state of many of the contributing stocks. Current NASCO regulatory measures provide for a fishery to occur for internal use, noting that level to be about 20 mt in the past. However, under current regulatory measures, total reported landings of salmon in Greenland have risen steadily (35 mt in 2012, 48 mt in 2013, and 58 mt in 2014). These reported landings are in addition to unreported catch. At present, the other components of the fishery (personal consumption, private sales, etc.) remain unlimited.

Populations of United States-origin salmon are also harvested by St. Pierre and Miquelon (an offshore territory of France located off the coast of Newfoundland). While smaller in scale than the West Greenland fishery, it operates outside any international management regime as France (in respect of St. Pierre and Miquelon) has refused to join NASCO. Moreover, the domestic management regime in place does not effectively limit what can be caught.

Climate Change (Factor E)

At the time of listing in 2009, although there was reasonable certainty that climate change was affecting Atlantic salmon in the GOM DPS (e.g., NRC 2003, Fay et al. 2006), there was uncertainty about how and to what extent. Since listing, new and emerging science has led to a better understanding of climate change effects and their ramifications for salmon. Recent information indicates that climate change is having significant impacts on the ecosystems that Atlantic salmon depend on, and, in turn, affecting the overall survival and recovery of Atlantic salmon (Mills et al. 2013).

Briefly, climate change can affect all aspects of the salmon's life history as entire ecosystems shift from one state to another, altering habitat features through increases in sea surface temperatures. Global averaged combined land and ocean surface temperatures show a warming of 0.85 °C (0.65 to 1.06 °C) over the period 1880 to 2012 (Intergovernmental Panel on Climate Change 2013).

It can also affect changes in frequency of seasonal cycles of phytoplankton, zooplankton, and fish populations in the marine environment (Greene and Pershing 2007); changes in freshwater hydrologic regimes; and alterations in the timing and frequency of river ice flows. All of these factors influence environmental cues that stimulate Atlantic salmon migration, spawning, and feeding activities. As this is now considered to be an emerging threat to the viability of the DPS, new information and analyses will be posted on the Web site (see the Climate Change hyperlink above) as they become available.

C. Historical and Contemporary Conservation Measures

Atlantic salmon conservation and restoration efforts have been underway for more than 150 years. The earliest efforts to restore and improve anadromous fish runs in New England rivers were driven by depletion of stocks through non-sustainable commercial fisheries, coupled with some habitat loss due to impassable dams; pollution was also considered a factor in fish population declines.

Subsequently, artificial propagation and fish culture programs were established first at CBNFH and later at GLNFH. These programs have allowed Atlantic salmon to survive during times that many of Maine's rivers were not suitable for salmon survival; they also allowed for maintenance of an economically important recreational fishery through the early 1990s. The hatchery programs are now essential in preserving the genetic integrity of the last remaining Atlantic salmon populations in the United States.

Efforts to restore river habitats in order to support Atlantic salmon started with the recognition that dams without fish passage were a major threat to the species. A number of Federal laws were then enacted that contributed to Atlantic salmon conservation, including the Water Pollution Control Act of 1948, which subsequently became the Clean Water Act of 1972, and the Anadromous Fish Conservation Act of 1965. The Clean Water Act significantly curtailed pollution that had once caused rivers and streams in Maine to be toxic to both humans and fish, while the Anadromous Fish Conservation Act provided resources to install fishways on most of the mainstem dams in the Penobscot River and remove or breach defunct dams in the Narraguagus, Machias, and Sheepscot Rivers. By all indications, these efforts were working to restore salmon, and in the early 1970s Atlantic salmon returns began increasing. Through the mid-1980s, between 2,000 and 3,000 adult returns were being documented on the Penobscot fairly consistently.

In 1983, the State of Maine adopted its first prioritized, biologically based, statewide restoration and management plan for Atlantic salmon (Baum 1997). This plan was directed at building and maintaining a viable run of Atlantic salmon and fishery in the seven remaining rivers that contained wild Atlantic salmon. Unfortunately, shortly thereafter Atlantic salmon marine survival rates crashed, leading to precipitous declines in Gulf of Maine salmon populations.

In the 1990s, the salmon program shifted to stock preservation and an attempt to understand why populations were declining, including genetics studies. During this time, Federal hatcheries transitioned to a program aimed at preserving remaining river-specific natural genetic diversity. Other management and science efforts also shifted towards more active conservation, including closing a commercial fishery believed to be central to the decline and assessing freshwater habitats.

Although commercial fisheries for Atlantic salmon within the United States have been closed since 1947, fisheries continue within the species' migratory corridor off the coast of Canada and Greenland. To effectively engage in issues requiring international collaboration such as these distant water fisheries, the United States maintains a presence at the North Atlantic Salmon Conservation Organization (NASCO) and International Conference for the Exploration of the Seas (ICES). The United States is a signatory to the "Convention for the Conservation of Salmon in the North Atlantic Ocean" which entered into force in October 1983, creating NASCO to ensure that the burden of Atlantic salmon conservation was shared by both States of Origin and Distant Water Countries. NASCO promotes the conservation, restoration, enhancement, and rational management of salmon stocks in the North Atlantic Ocean through international cooperation.

With the 2000 Federal listing of Atlantic salmon as endangered and the [initial recovery plan](#) (NOAA and USFWS 2005), emphasis was placed on making major improvements to the conservation hatchery and stocking programs, and expanding habitat conservation efforts. Conservation efforts were also directed toward concerns with aquaculture, protecting accessible freshwater habitats by reducing threats from water and land use practices, and identifying impacts associated with water quality.

Although significant habitat improvements have been undertaken for many decades (e.g Edwards dam removal), there was an emphasis shift since the mid-2000s. This has included improving connectivity by locating and removing culvert barriers, removing dams when possible, and installing fishways when dam removal was not feasible. These efforts were exemplified by the removal of two mainstem hydroelectric projects and construction of a bypass at a third project on the Penobscot River. In addition, the Services and hydro developers in the GOM DPS have worked together to craft plans for fish passage at hydro facilities. Downstream and upstream fish passage improvement projects and fish passage studies are now underway at many hydro projects within the designated critical habitat area for Atlantic salmon.

The conservation efforts of the past century, largely driven by regulatory measures, have afforded important conservation benefit to the GOM DPS and the entire suite of diadromous fish that coexist alongside Atlantic salmon. Without these efforts, salmon, along with many other diadromous species, would likely have been extirpated from Maine's rivers and streams decades ago.

PART II. RECOVERY STRATEGY

The following recovery strategy recognizes that the survival and recovery of the GOM DPS of Atlantic salmon currently relies on the conservation hatchery programs. Reliance on the hatchery programs is expected to continue until (1) much more is understood about the factors involved in marine survival, and (2) both adequate stream passage and adequate marine survival rates can be achieved to the point where wild salmon are returning to spawn at sustainable levels. Therefore, the primary drivers of ongoing and future recovery efforts are the need to reduce uncertainty and the ability to address those factors most likely to allow increased numbers of wild salmon to return to their spawning habitat each year. Each element of this strategy is discussed below.

A. Foundation

1. Conservation Frameworks

The central aim of recovery of the GOM DPS is a population that has a negligible risk of extinction in the foreseeable future due to threats from environmental variation, demographic variation, or changes in genetic diversity. The foundational principles for achieving this aim are based on Shaffer and Stein's (2000) "3 Rs" principles and McElhaney et al.'s (2000) principles regarding viable salmon populations (VSPs). The 3 Rs framework identifies resilience (population health), redundancy (distribution), and representation (genetic and niche diversity) as the basic indicators of species viability. In general, the more resilient, redundant, and representative a species is, the more likely it is to persist over time, even under changing environmental conditions. The VSP framework, originally used to determine the conservation status of Pacific salmonids, is now recognized as a tool that can be applied to evaluating the viability of additional salmonid species.

2. Conservation Assessments

In addition to these conservation frameworks, recovery of the GOM DPS is predicated on the assessment results for three fundamental aspects of Atlantic salmon conservation: population viability, habitat availability, and abatement of threats to the species. Although each of these aspects pertains to the rangewide status of the species, the near- to mid-term recovery focus is on assessing and managing for viability in the freshwater environment. For instance, although marine survival is the biggest driver of Atlantic salmon population trends in the GOM DPS, the maximum potential abundance of the salmon is directly proportional to the quantity and quality of habitats that are available for spawning and juvenile rearing. Further, barriers that block or impede salmon passage and threats that reduce the quality and quantity of habitat decrease the potential abundance of salmon that is needed to support a sufficiently large, geographically distributed population that is resilient to environmental perturbations such as poor marine conditions, drought, and extreme temperatures.

Population Viability

Increasing the abundance, productivity, and distribution of naturally reared Atlantic salmon in GOM DPS rivers addresses both the 3 Rs and VSP frameworks. Increased abundance and productivity rates will improve the resilience of each population in the DPS, while maintaining a wide distribution of Atlantic salmon across the range of the DPS. Increased abundance and productivity rate will ensure that the metapopulation characteristics of Atlantic salmon are retained and provide redundancy and representation of populations across the range. Atlantic salmon have strong homing characteristics that allow local breeding populations to become well-adapted to a particular environment. At the same time, limited straying does occur among salmon populations; this helps maintain population diversity through exchange of some genes between populations and allows for population expansion and recolonization of extirpated populations. Accommodating these life history characteristics and distributional needs should provide protection from demographic and environmental variation.

Assessment of both population-level and rangewide extinction risks provides the foundation for setting recovery thresholds with respect to abundance, productivity and distribution. This assessment requires analysis of the various factors that influence viability. Overall analysis results indicate that a minimum of 2,000 adult wild salmon must return to spawn in each SHRU to achieve rangewide population viability.

It is important to note that the USFWS Maine Fisheries Complex's hatchery program is critical to maintaining genetic diversity and effective population size while populations are low (see Phased Approach below). It is also important, however, to recognize that hatchery management is subject to funding availability. Hatchery funding contingencies could lead to changes in the recovery strategy for the DPS and will inform continuing discussions about the overall feasibility of recovering the species.

Freshwater Habitat Availability

The life history of the Atlantic salmon requires a high degree of access between freshwater, estuarine, and marine environments, and sufficiently suitable natural habitats must be available to support wild populations. Habitat access is categorized as:

Habitat with No Access: Habitat above a barrier (dam or road stream crossing) that has no fish passage

Habitat with Impeded Access: Habitat above a barrier that temporarily blocks or impairs a salmon's natural ability to pass (e.g. a culvert or dam with a fishway with limited function).

Habitat that is Accessible: At a minimum, the habitat must allow for movements of parr that seek out suitable habitats for feeding and sheltering, downstream movements of smolts during the spring migration, and upstream and downstream movement of adults that seek out habitats for spawning and resting. To meet this standard, habitat must be either (1) accessible above a dam with upstream and downstream passage that does not preclude recovery, or (2) accessible above road stream crossings set at the correct elevation using [Stream Simulation methodology](#).

Habitat that is Fully Accessible: Habitat where there is no artificial barrier between it and the ocean.²

To ensure the long-term sustainability of wild populations, there must be sufficient access to suitable habitat to support spawning and juvenile rearing. Ultimately, returning adults will dictate the actual amount of habitat needed, but the minimum amount of suitable habitat that must be accessible to returning adults is considered to be 30,000 HUs per SHRU to delist the DPS, as explained in the [2009 critical habitat rule \(NOAA 2009, appendix C\)](#).

This estimate is tied to the number of 2,000 adult wild spawners in each SHRU needed to ensure the long-term viability of the GOM DPS. Suitable freshwater habitat is assessed at the HUC 10 level (small watersheds) and is based on observations of physical and biological features that salmon most often select. Although the habitat quality assessment provides reasonable predictability of where the best habitats are for the spawning and rearing of Atlantic salmon, they do not represent verifiable evidence of the productivity of a HUC 10 watershed. Not until areas that are currently impeded or inaccessible allow for uninterrupted migration will we be able to fully assess the productive potential of a particular habitat area for Atlantic salmon. Likewise, the optimal composition and spatial distribution of this habitat throughout each SHRU is uncertain, as tools to identify and characterize habitat productivity at fine resolution across entire watersheds are currently limited. These limitations will be addressed through adaptive management approaches.

Threats Abatement

The ESA requires that recovery criteria reflect the five factors upon which determinations to list, reclassify, and delist a species are based. Although not every identified threat needs to be completely eliminated to remove a species from the Federal endangered species list, current and foreseeable threats must be abated to the point where a recovered species is unlikely to become in danger of extinction again within the foreseeable future.

Because the level of uncertainty regarding threats and management options in the marine environment is high, this recovery strategy places a primary focus on abating threats in the freshwater environment and increasing our understanding of threats to marine survival. As we learn more about opportunities to improve marine survival rates, the recovery strategy, and recovery criteria based on the strategy, will expand accordingly to address those threats.

B. Adaptive Strategy

Recovery strategies are predicated on maximizing the likelihood of recovery success. To accomplish this, the strategy must address many sources of uncertainty. Assumptions must be

² The Services may categorize some bridges with natural stream channels and bottomless culverts as fully accessible if the area beneath the bridge has a gradient, width, floodplain and configuration similar to the existing natural channel upstream or downstream of the crossing.

made about future conditions, including environmental conditions, threats, funding availability, partner interest, and the species' response to management actions. To maintain the maximum likelihood of recovery success over time, the recovery strategy may need to be revised should any of these assumptions prove to be incorrect. Adaptive management, that is, adjusting management as outcomes from management actions and other events become better understood, provides a systematic means of addressing uncertainties and is an important approach for any recovery strategy. In addition to being a guiding principle for the overall recovery strategy, recovery actions that can benefit from a formal adaptive management process are specified as such in Part IV of this plan.

C. Phased Approach

Given the unavoidable complexity and uncertainties associated with recovery of the GOM DPS, as well as inevitable funding constraints, this recovery strategy adopts a stepwise approach that outlines a pathway towards recovery through four phases. The recovery actions outlined in this plan will be linked to each phase (see Part IV) to demonstrate their role in the overall recovery effort.

The four recovery phases are described below. Since the 2000 listing of Atlantic salmon populations, a number of recovery actions have already been addressed; consequently, the actions in phase 1 are largely complete, and the overall recovery effort has generally entered phase 2.

Phase 1: The first recovery phase focuses on identifying the threats to the species and characterizing the habitat needs of the species necessary for their recovery.

Phase 2: The second recovery phase focuses on ensuring the persistence of the GOM DPS through the use of the conservation hatcheries while abating imminent threats to the continued existence of the DPS. By the end of this phase, reclassification from endangered to threatened should be possible (see Part III).

Recovery actions associated with phase 2 are geared toward creating the necessary foundation for establishment and protection of sufficiently resilient wild populations to withstand foreseeable long-term stresses, and toward providing Atlantic salmon with access to suitable habitat throughout their life cycle. Given our current level of understanding, phase 2 focuses on freshwater habitat used by Atlantic salmon for spawning, rearing, and upstream and downstream migration; it also emphasizes research on threats within the marine environment.

Phase 3: The third phase of recovery will focus on increasing the abundance, distribution, and productivity of naturally reared Atlantic salmon. It will involve transitioning from dependence on the conservation hatcheries to wild smolt production and ensuring that mechanisms are in place to address continuing threats to the species in both the freshwater and ocean environments. We recognize that this is a long-term endeavor that will also need to address the information gaps associated with marine survival and, with this information in hand, identify appropriate management actions. At the end of Phase 3, delisting should be possible (see Part III).

Phase 4: The final phase of recovery is characterized by a self-sustaining wild population geographically distributed across connected habitats throughout the GOM DPS area, with minimal dependence on human intervention to complete its natural life cycle; mechanisms are in place that prevent or abate all foreseeable threats to the long-term survival of the species. This phase will involve postdelisting monitoring to show that full recovery can be sustained.

D. Geographic Framework

Recovery of the GOM DPS is contingent upon a wide range of research and management actions over an extended period of time. To organize recovery actions and ensure that they are implemented as effectively as possible, the geographic framework represented by SHRUs developed in the [2009 critical habitat rule](#) has been carried over to the recovery strategy for the DPS. These SHRUs (Downeast, Penobscot, and Merrymeeting Bay) provide a framework for articulating spatial distribution objectives and ensuring both that viable populations are established across the major geographic regions within the DPS and that threats are addressed effectively across the DPS.

E. Coordination and Collaboration

Federal agencies, State agencies, Tribes, industries, conservation organizations, private citizens, and other groups have been working toward restoring Atlantic salmon populations in Maine for over 100 years; many of these groups continue to provide support to salmon recovery throughout the DPS. To promote continued, strategic coordination among the wide array of partners to salmon recovery in Maine, the following approach to recovery implementation has been devised.

1. DPS-wide Recovery Implementation Strategy

This plan lays out the broad recovery actions needed to meet rangewide recovery criteria. Some of these actions are nongeographic and will be implemented according to the Implementation Table in Part IV. Most actions, however, are geographically based and will be implemented at the SHRU and local levels. Accordingly, in addition to research and management actions that will be accomplished at the DPS level, the broad recovery actions in this plan will tier down to SHRU-level workplans.

2. SHRU-level Workplans

The workplan for each SHRU will identify site-specific activities that will be worked on, contingent upon availability of resources, over the next 5 years. The [initial SHRU workplans](#) identify activities that, within each SHRU and ultimately on a DPS-wide basis, will contribute to a coordinated recovery effort aimed toward meeting the recovery criteria laid out in Part III. Some activities may be unique to a particular SHRU, while others may apply to all three SHRUs but at differing priorities and/or levels of effort from SHRU to SHRU.

We anticipate that the SHRU-level workplans will change over time as a function of adaptive management and identification of newly identified opportunities or threats. Regular meetings,

involving partners and the interested public, will be held to ensure that recommended activities are responsive to ongoing and emerging needs and opportunities.

PART III. RECOVERY GOALS, OBJECTIVES, AND CRITERIA

The following goals, objectives, and criteria set standards for ascertaining when recovery progress has been made under the ESA. These standards refer to the definitions of endangered and threatened under section 3 of the ESA: endangered means that a species is *in danger of extinction throughout all or a significant portion of its range*, whereas a threatened species is *likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range*.

Recovery goals, objectives, and criteria thus guide the recovery action program toward accomplishments that bring the species closer to the definition of threatened and, ultimately, to the point where neither definition applies and listing is no longer warranted. It is important to note that the standards in recovery plans are subject to change based on new information and insights, and that the statutory process for making reclassification and delisting determinations is the five-factor analysis under ESA section 4(a)(1).

A. Recovery Goals

The ultimate goal of this recovery program is to improve the long-term population viability of the GOM DPS of Atlantic salmon to the point where it no longer requires the protections of the ESA and can be removed from the Federal List of Endangered Wildlife and Threatened Wildlife. The intermediate goal is to reclassify the DPS from endangered to threatened by improving conditions to the point where it is no longer in danger of extinction but, in the absence of continued ESA protections, would likely revert to an endangered species in the foreseeable future.

B. Recovery Objectives

1. Reclassification Objectives

- Maintain sustainable, naturally reared populations in each SHRU and ensure access to sufficient suitable habitat in each SHRU for these populations.
- Ensure that management options, if any, for marine survival are better understood.
- Reduce or eliminate those threats that either individually or in combination endanger the DPS.

2. Delisting Objectives

- Maintain self-sustaining, wild populations in each SHRU, and ensure access to sufficient suitable habitat in each SHRU for these populations.

- Ensure that necessary and available management options for marine survival are in place.
- Reduce or eliminate those threats that either individually or in combination threaten the DPS.

C. Recovery Criteria

In accordance with section 4(f) of the ESA, this section presents criteria (or metrics) for identifying when the reclassification and delisting objectives for the GOM DPS have been achieved. The starting point for these criteria is the preliminary delisting criteria that were described in detail in the 2009 critical habitat rule (74 FR 29300). This plan builds on that rule and adds criteria for reclassifying the DPS from endangered to threatened status (also referred to as downlisting) under the ESA.

Both biological and threats-abatement criteria are required to address the recovery objectives above. Although criteria for abating serious threats to the GOM DPS salmon are specified, meeting the biological criteria presupposes that certain threats have been adequately reduced. Atlantic salmon abundance and productivity criteria cannot be met without addressing marine survival and reduced mortality from dams.

1. Biological Criteria³

Reclassification Criteria:

Reclassification of the GOM DPS from endangered to threatened will be considered when *all* of the following biological criteria are met:

- 1a. Abundance:* The DPS has total annual returns of at least 1,500 naturally reared adults spawning in the wild, with at least 2 of the 3 SHRUs having an annual escapement of at least 500 naturally reared adults.
- 1b. Productivity:* Each SHRU has a geometric mean population growth rate of greater than 1.0 in the 10-year (two-generation) period preceding reclassification.
- 1c. Origin:* Adults originating from hatchery-stocked eggs, fry, and parr—but not from hatchery-stocked smolts or adults—are included when estimating population growth rates.

³ It is important to note that the biological criteria for both reclassification and delisting address *only* the conditions needed to achieve a probability of long-term viability such that ESA protections are no longer warranted. The abundance criteria for DPS salmon do not take into account additional numbers of fish to support either recreational or sustenance fishing. Establishment of harvestable levels of salmon would necessarily be above and beyond these recovery criteria.

Id. **Habitat:** Sufficient suitable spawning and rearing habitat for the offspring of the 1,500 naturally reared adults is accessible and distributed throughout designated Atlantic salmon critical habitat, with at least 7,500 accessible and suitable HUs in each SHRU, located according to the known and potential migratory patterns of returning salmon.

Delisting Criteria:

Delisting of the GOM DPS will be considered when *all* of the following criteria are met:

Ie. **Abundance:** The DPS has a self-sustaining annual escapement of at least 2,000 wild adults in each SHRU, for a DPS-wide total of at least 6,000 wild adults.

If. **Productivity:** Each SHRU has a geometric mean population growth rate of greater than 1.0 in the 10-year (two-generation) period preceding delisting, *and* at the time of delisting, the DPS demonstrates self-sustaining persistence, whereby the total wild population in each SHRU has less than a 50-percent probability of falling below 500 adult wild spawners in the next 15 years based on PVA projections.

Ig. **Habitat:** Sufficient suitable spawning and rearing habitat for the offspring of the 6,000 wild adults is accessible and distributed throughout the designated Atlantic salmon critical habitat, with at least 30,000 accessible and suitable HUs in each SHRU, located according to the known migratory patterns of returning wild adult salmon. This will require both habitat protection and restoration at significant levels.

2. Threats-abatement Criteria

The criteria in this section describe how the five listing factors (see Box 2) will be addressed to determine whether a species warrants the protections of the ESA. The criteria focus first on [primary threats](#) to the DPS (including ongoing threats identified in the 2009 listing rule as well as emerging threats). These criteria are followed by criteria for threats considered to be secondary on an individual basis but which, in combination, constitute a major threat.

We note that, as a general rule, there tends to be more uncertainty about the degree to which threats must be reduced than there is about the demographic viability that must be achieved. When possible, such uncertainties will be resolved as recovery actions addressing threats are implemented, which will then allow us to frame more specific and quantitative threats abatement criteria.

Reclassification Criteria:

Criteria for reclassifying the GOM DPS from endangered to threatened focus on decreasing primary threats to a level needed to meet the definition of threatened under the ESA. When *all* of the following threats abatement criteria, in conjunction with the biological reclassification criteria above, are met, downlisting of the GOM DPS to threatened may be considered. Further,

completion of the recovery actions needed to meet these criteria will signal the end of Phase 2 of the recovery process for the DPS as described in the Recovery Strategy section of this plan.

- 2a. Dams and road stream crossings (Factor A):** A combination of dam removals, passable road crossing structures, and removal or redesign of any other instream barriers to fish passage provides salmon access to a minimum of 7,500 suitable HUs in each SHRU (see Biological Criterion 1d, above).
- 2b. Dams and road stream crossings (Factor A):** A conservation strategy is in place that creates incentives or provides assurances of increased survival and access to freshwater habitats necessary to achieve recovery either through dam removals or passage improvements.
- 2c. Regulatory mechanisms for dams (Factor D):** A Species Protection Plan or an equivalent plan is in place for all FERC licensed dams in Atlantic salmon's designated critical habitat.
- 2d. Climate change (Factor E):** A water quality monitoring program is established to track climate change trends and effects on (a) freshwater, estuarine, and marine habitats, and (b) salmon health. This program includes adaptive management strategies to mitigate or protect salmon from any harmful effects associated with climate change. In addition, freshwater areas that have greater resilience to climate change are identified, quantified, and incorporated into recovery goals and actions.
- 2e. Low marine survival (Factor E):** In combination with the climate change monitoring program, a program for identifying and quantifying additional anthropogenic threats in the marine environment is designed and implemented, and adaptive management strategies for mitigating the harmful effects of these threats, when possible, are developed. These factors include but are not necessarily limited to intercept fisheries and aquaculture management.
- 2f. Loss of genetic diversity (Factor E):** Extant DPS family groups and genetic diversity are maintained at levels needed to support Biological Criteria 1a, 1b, and 1c, above, through adaptive hatchery practices and stock management strategies. To prevent possible entry of deleterious traits associated with aquaculture, each DPS population is maintained at greater than 50 effective population size.

Delisting Criteria

When met, the following threats-based criteria will provide the basis for considering removal of the GOM DPS of Atlantic salmon from the Federal List of Endangered and Threatened Wildlife. Further, completion of the recovery actions needed to meet these criteria will signal the end of Phase 3 of the recovery process for the DPS as described in the Recovery Strategy section of this plan.

Delisting criteria addressing primary threats:

2g. Dams (Factor A): Improve upstream and downstream passage to allow for survival and recovery of Atlantic salmon. This can be accomplished by removing dams or through operational changes that meet *all* of the following conditions:

- Unimpeded access to spawning and nursery habitats is allowed
- Direct and indirect mortality of upstream and downstream migrating salmon is reduced to levels that allow survival and recovery
- The Atlantic salmon’s critical habitat features are properly functioning, including the full suite of coevolved diadromous fish

This must be accomplished to improve survival and access to spawning and nursery habitat, minimize migration delays, minimize direct and indirect mortality of migrating fish, and restore coevolved diadromous fish communities that transport nutrients and provide a prey buffer to Atlantic salmon. Freshwater habitat within designated critical habitat that is categorized as [accessible or fully accessible habitat](#) and allows for uninterrupted migration will be counted toward meeting this recovery criterion.

2h. Road stream crossings (Factor A): All culverts that block or impair passage of juvenile and adult Atlantic salmon and/or degrade surrounding habitat features are removed, repaired or replaced as appropriate to allow for survival and recovery of Atlantic salmon (design criteria are provided at [\[link\]](#)). Culvert removal, replacement or repairs must meet *all* of the following conditions:

- Survival and access to spawning and nursery habitats are improved
- Upstream and downstream migration delays are minimized
- Direct and indirect mortality of upstream and downstream migrating fish are minimized
- Co-evolved diadromous fish communities that transfer nutrients and provide a prey buffer to Atlantic salmon are restored

2i. Regulatory mechanisms for dams (Factor D): Regulatory mechanisms related to hydroelectric and non-hydroelectric dams will be in place as described below. To address this criterion, *all* of the following conditions must be met:

- Regulations for dams that support a recovered GOM DPS of Atlantic salmon are adopted and effectively enforced by FERC and the State of Maine
- Regulations ensure that upstream and downstream passage will allow for survival and recovery of Atlantic salmon
- Regulations ensure that water quality conditions resulting from dams support Atlantic salmon survival and recovery of the species.
- Regulations ensure that Atlantic salmon’s critical habitat features are properly functioning, including the full suite of co-evolved diadromous fish

2j. Marine survival (Factor E): The persistent decline in marine survival—both near-shore and open-ocean—is directly responsible for the low abundance of adult salmon. Threats to marine survival will be addressed by meeting *both* of the following conditions:

- Anthropogenic factors that influence marine survival (including intercept fisheries) are identified and quantified, and management measures that avoid or reduce these factors, such that they allow for survival and recovery, are in place
- An adaptive management strategy that incorporates marine survival models into Atlantic salmon management plans and regulatory mechanisms is implemented

2k. *Climate change (Factor E):* Recognizing a high degree of uncertainty, climate-induced threats to Atlantic salmon in both their freshwater and marine environments will be addressed as described below. This includes achieving *all* of the following conditions:

- Sufficient data, data collection tools, and predictive models are in place to allow for accurate forecasting of climate conditions as they relate to Atlantic salmon survival in freshwater and marine environments
- Robust predictive models are incorporated into Atlantic salmon management plans and regulatory mechanisms
- Connectivity to a wide range of diverse habitat types over a large geographic area is ensured to hedge against climate variability and long-term changes
- Access to, and protection of freshwater habitats is ensured as a means of achieving greater resilience to climate variability and long-term changes

Delisting criteria addressing secondary threats:

This category of threats includes multiple stressors that, in combination, rise to the level of a significant extinction risk to DPS salmon. Within this category, tradeoffs can be made in terms of how different stressors are addressed; in other words, not each and every criterion for secondary threats has to be met in order to consider delisting. Ultimately, a reasoned strategy for how secondary factors are addressed will be determined and provided for public review.

- 2l. *Instream flow conditions (Factor A):*** Instream flow conditions will maintain natural features such as water temperature and will not harm or interfere with Atlantic salmon spawning, incubation, rearing, or migration.
- 2m. *Water quality (Factor A):*** Threats to water quality in DPS rivers, including pollution from point and non-point source discharges, will be abated to the point where they do not interfere with Atlantic salmon spawning, incubation, rearing, or migration.
- 2n. *Habitat complexity (Factor A):*** Forest and land management practices will provide sufficient riparian protection to promote large wood debris and maintain natural alluvial processes in all three SHRUs.
- 2o. *Overutilization (Factor B):*** Threats related to intercept fisheries, bycatch in recreational fisheries, and poaching will be addressed as described below. To address this criterion, *all* of the following conditions must be met:
- Any commercial or recreational fishery that may affect salmon, or any utilization of salmon for commercial, recreational, scientific, or educational purposes, is closely

monitored, and programs are in place to ensure that these activities do not interfere with the continued survival and recovery of the GOM DPS of Atlantic salmon

- NASCO participation continues to bring forward our domestic interests in ensuring that intercept fisheries that impact United States-origin fish do not interfere with the continued survival and recovery efforts of the GOM DPS of Atlantic salmon

2p. Disease (Factor C): Bacterial, viral, and fungal diseases will be addressed meeting **both** of the following conditions:

- Rigorous disease prevention and management measures, protocols, and regulations that incorporate the most up-to-date science and information are implemented
- All commercial, recreational, and conservation hatcheries meet or exceed all compliance standards

2q. Predation (Factor C): Threats from various sources of predation on and competition with Atlantic salmon will be addressed by meeting **all** of the following conditions:

- Management plans are implemented for the stocking or introduction of nonindigenous species that prey on or compete with Atlantic salmon; these management plans include measures to prevent or reduce impacts of nonindigenous species on Atlantic salmon in a manner that supports a recovered GOM DPS of Atlantic salmon
- Populations of introduced predators of and competitors with Atlantic salmon are managed in a manner that supports a recovered GOM DPS of Atlantic salmon
- Regulations prohibiting the illegal introduction and the illegal stocking of any species of predator or competitor with Atlantic salmon are effectively enforced

2r. Regulations related to water withdrawals (Factor D): Regulations that ensure maintenance of natural variations in flows and water levels for all stream classes (Maine's class A, B, and C waters) will be effectively enforced.

2s. Regulations related to water quality (Factor D): Regulations that protect water quality necessary to support Atlantic salmon spawning, rearing, and migration needs will be effectively enforced.

2t. Regulations related to predation and competition (Factor D): Regulations prohibiting the illegal stocking or introduction of any species that prey on or compete with Atlantic salmon will be effectively enforced.

2u. Artificial propagation (Factor E): Through the period of operating and phasing out conservation hatchery programs for the DPS, remaining risks associated with these programs are addressed. This requires meeting **both** of the following conditions:

- Hatchery, broodstock, and stocking management plans are implemented to ensure that any ongoing hatchery practices minimize the risks of domestication and loss of genetic diversity of Atlantic salmon populations

- Stocking management plans are implemented to ensure that any ongoing stocking practices minimize predation on and competition with wild salmon populations to the extent necessary to support biological criteria for delisting

2v. *Aquaculture (Factor E):* Programs and management plans are implemented to ensure that aquaculture practices affecting the GOM minimize all interactions of aquaculture fish with wild populations of Atlantic salmon to the extent necessary to support a recovered GOM DPS.

2w. *Depleted diadromous fish communities (Factor E):* SHRU-level management plans are implemented for the restoration of coevolved diadromous species to the extent necessary to support a recovered GOM DPS.

2x. *Competition by nonnative species (Factor E):* Management mechanisms that reduce competition among nonindigenous species and Atlantic salmon will be implemented, including prohibiting the stocking of nonindigenous species in Atlantic salmon habitat.

D. Evaluating Recovery Progress

Achievement of the recovery criteria will reflect an actual reduction in threats and an increased likelihood of long-term survival. The Services and our partners keep track of progress towards recovery through the Environmental Conservation Online System (ECOS), a gateway Web site that provides access to data systems in the USFWS and other government data sources. This central point of access assists USFWS and NOAA personnel in managing data and information, and it provides public access to information from numerous USFWS databases.

PART IV. RECOVERY ACTIONS

As explained in Part II, this recovery plan focuses on the broad actions necessary to recover the GOM DPS of Atlantic salmon. These actions address both short-term and long-term survival and recovery needs. Those shorter-term actions that are geographically based will then be further specified in the [SHRU-level workplans](#).

A. Recovery Actions

1. **Habitat Connectivity:** Enhance connectivity between the ocean and freshwater habitats important for salmon recovery.
 - 1.1 **Identify and prioritize highest priority fish passage barriers for remediation.**

This action should ensure that the most productive areas are well connected to each other and to the GOM, and that restoration projects are prioritized based on their biological merits. The prioritization must provide a clear and transparent way of assessing the relative biological value of individual restoration opportunities.
 - 1.2 **Perform fish passage barrier assessments throughout the GOM DPS.**

Assessing the effects of barriers requires accurate data on the amount of habitat in a watershed, both above and below a given barrier, as well as the accessibility of a given barrier as it exists without any restorative action. On-the-ground barrier surveys are required to measure barrier height and seasonal flow characteristics (depth, velocity, etc.) to ensure that priorities are set using accurate information.
 - 1.3 **Determine the feasibility of connectivity projects important to Atlantic salmon.**

After potential restoration projects have been identified, comprehensive feasibility analyses (including alternatives analyses) are needed to ensure that a given project has a reasonable likelihood of being completed.
 - 1.4 **Conduct engineering studies for potential fish passage improvement projects.**

Once the feasibility of a given restoration project has been analyzed and deemed appropriate to move forward, the project must be designed by a professional engineer (PE). While local conservation groups are often the driving force behind any given project, they must typically hire the services of a PE for these aspects of project implementation.
 - 1.5 **Permit potential fish passage improvement projects.** A variety of local, State, and Federal regulations must be complied with during restoration project implementation. Among other things, this requires application to a variety of regulatory agencies for permits to conduct the project.

- 1.6 Remove dams according to the prioritization guidelines, as feasible.** The size of the Atlantic salmon population is determined by the availability of spawning and rearing habitats available to them. Barriers to fish passage lower the ceiling on the overall carrying capacity of the GOM DPS. For the population to grow and be self-sustaining, the carrying capacity ceiling must be raised to a level that overall production of smolts generated from freshwater habitats is substantial enough to withstand periods of low marine survival. Dam removal offers the highest likelihood of raising the ceiling by reconnecting large amounts of freshwater habitat required for salmon to successfully complete their life history. Dam removals will be accomplished through a variety of agency staff work and the funding from external groups.
- 1.7 Remove or replace culverts according to the prioritization guidelines, as feasible.** Culverts and other road crossings can block the migration of salmon and other migratory fish, particularly in headwater areas where culverts are ubiquitous across the landscape. Headwater habitats can serve as spawning and nursery habitats and are often important areas for temporary or long term feeding and thermal refuge by Atlantic salmon parr. The effects of known passage barriers can be ameliorated by culvert removal (often through road de-commissioning), culvert replacement (i.e., resizing to 1.2 bank-full width or greater), or bridge construction.
- 1.8 Install fishways according to the prioritization guidelines, as feasible.** In some instances, removal of fish passage barriers (particularly dams) is deemed to be unacceptable at a given site. However, traditional engineered fishways and nature-like fishways (rock ramps, nature-like bypasses, etc.) may be installed to partially ameliorate the effects of a given barrier. If properly designed, these fishways can provide sufficient protection to Atlantic salmon and their ecosystems.
- 1.9 Establish fish passage efficiency targets that do not "jeopardize the continued existence" of the GOM DPS of Atlantic salmon.** One of the primary factors leading to the listing as endangered of the GOM DPS is the presence and continued operation of mainstem hydroelectric dams. Fish passage efficiency targets need to be developed that ensure that dam operations can continue in a manner that does not result in jeopardy to the species.
- 1.10 Enforce fish passage efficiency targets developed under action 1.9.** Once fish passage efficiency targets have been established, NOAA will work with dam owners and other affected stakeholders to effectively implement and monitor these targets.
- 1.11 Establish accessible passage criteria for road stream crossings.** Fish passage criteria need to be established at road/stream crossings that describe the set of conditions necessary to allow for movement of all life stages of Atlantic salmon.

1.12 Implement passage criteria at road stream crossings through ESA consultation and permitting actions. Passage criteria developed through 1.11 will be implemented through section 7 consultation work with Federal action agencies and permit applicants.

1.13 Conduct pre- and post-barrier removal and fish passage improvement monitoring using up-to-date methods. Post-barrier removal habitat and ecology monitoring is essential to determine whether these projects provided the expected benefits to Atlantic salmon. Determining the effectiveness of habitat barrier removals may include but is not limited to the following studies:

- Monument cross-sectional surveys
- Grain size distribution surveys
- Photo station surveys
- Wetland and riparian plant community surveys
- Fish community structure surveys
- Juvenile salmon migration studies
- Adult salmon migration studies
- Water quality surveys
- Benthic macroinvertebrate surveys
- Enumeration of salmon spawning habitat made available as a result of the restoration
- Enumeration of salmon rearing habitat made available as a result of the restoration
- Enumeration of salmon spawning and rearing habitat made accessible as a result of restoration

2. Genetic Diversity: Maintain the genetic diversity of Atlantic salmon populations over time.

2.1 Genetically monitor Atlantic salmon. Exact methods and analyses will likely change over time; however, any genetic method used must ensure that hatchery Atlantic salmon are genetically fit and that the genetic integrity of the DPS is maintained. Monitoring activities will include but not be limited to the following:

- Annually characterize parr and sea-run adults
- Monitor broodstocks for evidence of genetic diseases or deleterious genetic traits
- Monitor estimates of genetic diversity of the wild or naturally reproducing Atlantic salmon
- Continually monitor critical trait variation (quantitative, morphometric, other physical trait) to assess risks of inadvertent selection.
- Track spawning history for all Atlantic salmon held for broodstock purposes
- Monitor effectiveness of the Army Corp of Engineers (ACOE) aquaculture biological opinion (including site inspections, audits, etc.)

- 2.2 Prioritize ongoing genetic data analysis needs with respect to management goals.** Given limited funding, annual assessment of priorities for genetic analysis is important to determine that annual monitoring needs are completed and prioritize additional needs based on needed application of genetic methods for monitoring, assessment, or evaluation of ongoing studies or programs.
- 2.3 Conduct a gap analysis to determine if additional areas of genetic study are needed.** Existing data should be examined in terms of the overall genetic assessment needs of the program. This analysis may include review of literature to identify new tools, techniques, or analyses that, if applied to the Maine Atlantic salmon program, could provide additional insight into the restoration program.
- 2.4 Manage data resulting from production, stocking, and genetic evaluation to facilitate program assessment and monitoring.** This includes database development and management and maintenance of information from annual updating and evaluations.
- 2.5 Genetically analyze and evaluate management practices relating to DPS recovery.** Monitoring results from Action 2.1 and ongoing research results will be used to genetically evaluate management practices relating to DPS recovery. This will include but is not limited to the following practices:
- Genetically assess consequences of alternate stocking strategies for multiple life history stages.
 - Annually evaluate broodstock collection practices by genetically determining parentage to identify percentage of families recovered from stocking events
 - Use genetic monitoring data to evaluate if hatchery practices (including spawning, stocking, or rearing) are resulting in artificial selection.
 - Evaluate the genetic implications of collecting adult fish for captive propagation versus potential offspring of wild reproduction in the parr collections, allowing for increased natural escapement.
 - Evaluate and optimize grading practices to reduce genetic selection (initial emphasis on grading for smolt production).
 - Develop and complete additional, experimental genetic analyses and provide genetic analysis to support projects to evaluate hatchery production of Atlantic salmon.
- 2.6 Use genetic analyses to inform and improve best hatchery management practices.** This will include but is not limited to the following genetics applications:
- Use genetic data to inform selection of spawning pairs to minimize inbreeding and to guide spawning practices.
 - Use genetic analyses to optimize practices to reduce risks of inadvertent selection that might reduce fitness in the wild
 - Optimize practices to reduce risks of inadvertent selection that might reduce fitness in the wild

- Implement pedigree lines if demographic, family recovery, aquaculture escape event, or another parameter limits the potential collection of a broodstock year class.
 - Maintain and enhance as applicable the genetic viability of river-specific broodstocks for supplementation according to the broodstock management plan.
 - Link hatchery production parameters (i.e., changes in fecundity, broodstock reproducing, etc.) to genetic characteristics of the broodstocks to assist in monitoring fitness.
- 2.7 Implement stocking practices that broadly distribute genetic groups (families) throughout the stocking sites.** This action is intended to minimize the loss of genetic diversity and maximize selective pressures in both the freshwater and marine environments to the seven river specific brood stocks maintained in the conservation hatcheries.
- 2.8 Implement the practices identified in the broodstock management plan to maintain genetic diversity for each broodstock.** This will include incorporation of parr that are not assigned to hatchery broodstocks as long as those individuals have passed screening requirements.
- 2.9 Implement collection practices that obtain representative genetic variation.** Implement recommendations identified in the broodstock management plan and work with broodstock collectors to ensure that broodstock collection practices obtain representative genetic variation from each population. This would include collecting the majority of artificial and wild-spawned families and widespread field collection for the parr collection programs. Funding is provided for developing guidelines and recommendations and working with staff to make sure these guidelines are understood and implemented.
- 2.10 As needed, evaluate, improve, and enhance the hatchery product and broodstock management practices in experimental environments outside of hatchery production requirements.** Provide genetic analysis to support studies that require genetic analysis to identify individuals stocked as part of experimental studies.
- 2.11 Screen incoming parr and adults for aquaculture escapees.** Use the genetic screening practices identified in the broodstock management plan to screen incoming parr and adults for aquaculture escapees. This work is completed annually by the USFWS Conservation Genetics Lab for both parr and adult collections, and results are provided to CBNFH prior to spawning.
- 2.12 Prevent aquaculture adults from entering rivers.** Use existing trapping facilities and weirs and emergency methods when large escapes occur and trapping is possible. Provide additional staff and supplies needed to coordinate and monitor, when needed, large aquaculture escape events.

3. **Conservation Hatchery:** Increase adult spawners through the conservation hatchery program.
- 3.1 **Conduct annual fish health, disease, and biosecurity activities related to conservation hatcheries annual activities.** Current activities at the Lamar Fish Health Center and Lamar Fish Tech Center will be adapted as necessary.
- 3.2 **As long as needed, maintain captive brood populations for DPS rivers.** This action includes spawning, stocking, and brood collection activities. Captive brood populations will be maintained for all of the following rivers:
- Dennys River
 - East Machias River
 - Machias River
 - Narraguagus River
 - Pleasant River
 - Sheepscot River
- 3.3 **Maintain sea-run based broodstock for the Penobscot River through annual capture, transport, holding, and spawning of adult salmon returning to the river.** Penobscot sea-run brood will continue to be utilized as the preferred source of all hatchery products for the Penobscot River. The conservation hatcheries may target the production of multiple life stages including providing eggs, fry, parr, and smolts for stocking efforts.
- 3.4 **Maintain and spawn Penobscot River domestic broodstock, including stocking activities, as needed.** Green Penobscot eggs will be used to prevent production shortfalls for stocking the Penobscot.
- 3.5 **As appropriate, annually collect salmon parr from the Penobscot River to maintain brood.** This action is contingent on upon enough adult salmon returning to allow spawning to occur in the river. It is based on concerns about the relatively low numbers of returning adult salmon to the Penobscot River since 2012, and the intent is to collect salmon parr from the watershed to increase the size of the brood for the river and prevent the loss of genetic diversity in the population.
- 3.6 **Investigate the feasibility of developing river specific broods for the Kennebec and Androscoggin rivers.** Developing individual broods for these rivers that historically supported large numbers of Atlantic salmon could prove to be an important long-term recover action for the DPS.
- 3.7 **Stock adult spent brood into river of origin.** All spent hatchery brood, with a few exceptions due to research projects, will continue to get released back into their river of origin.

- 3.8 As appropriate, continue to provide eggs to Pleasant River and East Machias River hatcheries for the purpose of increased biosecurity for these broods.** This action supports partners' efforts with alternative rearing and stocking strategies.
- 3.9 When possible, produce Atlantic salmon (numbers and life stages) necessary to implement upstream and downstream fish passage studies at hydroelectric and other fish passage structures/barriers within the GOM DPS.** Production of salmon for this activity should not impact brood management. However, due to the importance of these passage studies consideration should be taken to provide salmon when possible.
- 3.10 Mark significant number of smolt/parr releases.** Continue to mark representative samples of hatchery-produced smolt and parr for positive identification as returning adults (both for production/stocking assessments and research projects).
- 3.11 Enumerate smolt emigration from freshwater rearing habitats.** This information is used to assess freshwater habitat productivity and hatchery product survival from fry through smolt, and provides the basic information needed to calculate smolt-to-adult survival. The primary method is trapping with rotary screw traps.
- 3.12 Monitor and assess instream fry and parr.** This action is the primary mechanism for providing freshwater life stage information to assess hatchery product success relative to specific benchmarks in the wild. This action also covers substantial wild (progeny of natural spawning) production monitoring, since these fish are captured while sampling for hatchery products, although it is often impossible to distinguish the wild from hatchery products at these life stages.

4. Freshwater Conservation: Increase adult spawners through the freshwater production of smolts.

- 4.1 Implement a DPS-wide juvenile salmon sampling plan.** This will include assessment of abundance, overwinter survival, parr migration distances, and habitat utilization. Implement a standardized juvenile assessment sampling scheme across the DPS to provide large parr trend information at the HUC 10 and SHRU scales. The goal is to maximize the use of information collected from individual action assessments and minimize additional sampling needed to have enough power to detect changes in long-term trend dataset. The assessment will rely primarily on catch-per-unit-effort (CPUE) electrofishing protocol for stream resident juveniles. An approach integrating CPUE with the few long-term salmon population assessment sites allows sampling more sites in sub-drainages and provides an index of relative population abundance and distribution that can be related to juvenile Atlantic salmon density.

- 4.2 Implement a smolt production evaluation program in selected rivers.** Estimates of emigrating smolts provide a measure of smolt production that links parr production to adult returns and redd counts. The goal is to conduct smolt trapping at one long-term site within each SHRU to establish an index of smolt production.
- 4.3 Monitor reaches for natural re-colonization and redds.** This effort should be adjusted as stocking/reintroduction strategies change. While the standardized assessment will focus on occupied habitat, this action will monitor unoccupied areas for natural re-colonization (areas with no active stock enhancement, but accessible by Atlantic salmon) through annual juvenile assessments and redd surveys with a goal of documenting changes in distribution of Atlantic salmon.
- 4.4 Monitor environmental limiting factors.** These factors may include water temperature, pH, impacts of sedimentation, impacts of non-point source pollution, gravel, mining, other stream channel degradation, minimum flows, impacts of irrigation water withdrawals (both surface and groundwater withdrawals), impacts of reduced habitat complexity, and availability of cold water refugia. A systematic monitoring network to provide data to identify environmental limiting factors, both short- and long-term, in each SHRU from headwater streams to coastal rivers will be developed and implemented. This monitoring network will complement existing USGS gage sites.
- 4.5 Identify areas for riparian habitat improvement and management.** Areas for riparian habitat improvements will be identified in conjunction with habitat surveys and modeling efforts. Riparian zones benefit fish habitat by providing overhead cover and shade, woody debris, organic matter (leaf litter provides food sources for invertebrates and fish), and invertebrates, and can improve water quality.
- 4.6 Pursue resources for riparian zone restorations through grant writing and the help of NGO partners.** Areas identified in Action 4.5 will be priorities for seeking funding.
- 4.7 Develop, implement, and update a reintroduction plan using data from sampling and habitat utilization monitoring.** The reintroduction plan will identify strategies for stocking hatchery brood that incorporate overall habitat quality and habitats that have become accessible through the implementation of fish passage projects. The plan will be adapted as habitat suitability and accessibility changes and wild populations begin to be reestablished.
- 4.8 Monitor for aquaculture escapees and respond as needed.** The genetic screening practices identified in the broodstock management plan will be used to annually screen incoming parr and adults for aquaculture escapees.
- 4.9 Stock/reintroduce hatchery products according to broodstock management plan/strategic stocking plan/reintroduction plan.** Release hatchery products in

accordance with guidance documents. Depending on the phase of recovery, hatchery products will be used to achieve different conservation goals.

- 4.10 Assess impacts of avian, piscine, and mammalian predation on DPS salmon.** Establish what the effects are of predation on juvenile, smolt, and adult Atlantic salmon in freshwater, and how predation can be reduced. This action will evaluate sources of Atlantic salmon predation and their impacts on juvenile and smolt production.
- 4.11 Develop a strategic plan for minimizing the impacts of predation.** Building upon information gathered that identifies the potential impacts of avian, piscine, and mammalian predation is having on Atlantic salmon populations in the DPS, identify mechanisms to minimize these impacts. The strategic plan will be shared with the tribes, State and Federal agencies and nongovernmental partners.
- 4.12 Develop strategic plans for freshwater habitat management and restoration** Habitat restorations should be prioritized based on the expected benefits to Atlantic salmon populations, accessibility (current and future) to adult Atlantic salmon, and the degree and type of degradation by contrasting current and predicted juvenile Atlantic salmon production.
- 4.13 Implement freshwater habitat management and restoration projects.** Once habitat restoration projects have been identified and prioritized, the projects need to be completed in a timely manner to maximize the benefit to Atlantic salmon in the DPS. Project implementation and completion will likely take many forms involving State, Federal, nongovernmental, and private partnerships.
- 4.14 Develop and implement studies of the ecological role of coevolved diadromous species.** A complete understanding of the role of coevolved diadromous species in relation to Atlantic salmon life history and migration patterns is necessary to recover the species.
- 4.15 Monitor the effectiveness of CWA State water quality standards for salmon waters.** This will involve consulting with the State and EPA as appropriate. Continual monitoring of the effectiveness of water quality standards within the DPS is necessary to ensure habitat suitability and survival of Atlantic salmon while they inhabit freshwater habitats.
- 4.16 Monitor, evaluate, and engage in review of introduced species stocked as sport fish in or near salmon waters.** Also monitor and evaluate impacts of incidental catch of Atlantic salmon while sport fishing. Minimize the potential impact of recreational fishing within the DPS, in areas inhabited by Atlantic salmon. Work with State agencies and local sportsmen groups to determine potential impacts.
- 4.17 Fully engage in Federal permit review of actions that may affect/impact salmon, and coevolved diadromous fish and their habitats.** These permit reviews

are conducted under the Clean Water Act, Endangered Species Act, Magnuson-Stevens Act, Essential Fish Habitat, and Fish and Wildlife Coordination Act and are intended to restore and maintain the biological, physical and chemical integrity of the habitats of these fish.

4.18 Establish and implement an in-lieu-fee-based mitigation program targeted at unavoidable impacts to streams and rivers. Work in partnership with the Army Corps of Engineers to identify projects where in-lieu-fee-based mitigation for identified impacts to Atlantic salmon critical habitat is the best solution.

5. Marine and Estuary: Increase Atlantic salmon survival through increased ecosystem understanding and identification of spatial and temporal constraints to salmon marine productivity to inform and support management actions that improve survival.

5.1 Reduce effects of human activities on migratory smolts in estuary, coastal, and Northeast Shelf Domestic waters. This will include: a) Minimize potential effects of construction activities on Atlantic salmon migration success through estuaries, bays and the GOM by effective permit conditions; b) enhancing and protecting estuarine and marine habitat areas through coastal zoning and marine spatial planning; c) protecting Atlantic salmon from fisheries in domestic waters through support of updates to the New England Fisheries Management Council (NEFMC) Atlantic salmon Fisheries Management Plan (FMP) that prohibit possession and any directed catch and through support of other FMP's that reduce/eliminate incidental catch in federal waters and d) examining various marine-phase data to gain insights into survival bottlenecks.

5.2 Perpetuate an active U.S. management role at NASCO to improve at-sea distant water survival of Atlantic salmon through reduction of fishing mortality and evaluation of drivers of natural mortality at sea. This will be accomplished by a) participating in annual stock assessments supporting International Council for the Exploration of the Sea Working Group on North Atlantic Salmon (ICES WGNAS) advice to NASCO to protect salmon in distant water fisheries; b) participating in NASCO's International Atlantic Salmon Research Board (IASRB) to better understand factors influencing natural mortality of salmon at sea through cooperative science; c) continuing participation in and oversight of NASCO's West Greenland sampling to monitor catch for U.S. salmon and enhance estimates of catch and effort; and d) continuing participation in and oversight of SALSEA Greenland transition to next IASRB initiative.

5.3 Integrate current estuary-coastal salmon science findings into operational fish and habitat management activities while continuing to study the location and mechanisms of estuarine-coastal mortality. This action will include: a) continued building of domestic and international acoustic and satellite tracking infrastructure in estuaries, bays, the Gulf of Maine, and Northwest Atlantic, and facilitate partnerships with the Integrated Ocean Observing System community and Ocean Tracking Network through initiation and support of ecosystem-based tracking

studies; b) supporting bioenergetics modeling/analysis of marine salmon to evaluate the importance of predator and prey fields and ocean circulation on Atlantic salmon growth and survival in the GOM and Northwest Atlantic Ocean; c) continuing to archive and analyze historical high seas tag recaptures databases and scale collections; and d) continuing to support adaptive management studies based on Nearshore Survival Workshop recommendations and recent science advances to proactively change management approaches to improve survival and understanding of driving factors.

5.4 Minimize impacts of climate change and marine prey base shifts by managing salmon populations for resilience. This will include; a) examining interactions of salmon with predators and parasites – continue to monitor the occurrence of marine mammal scars on returning adults to the adult trap in the Penobscot River; b) conducting smolt telemetry, hydro-acoustic and survey projects to further investigate migration timing and ecology in estuary and coastal waters; and c) continuing a comprehensive evaluation of existing marine related data for correlations at U.S., North America, and North Atlantic scales to better characterize impact of oceanographic changes on Atlantic salmon survival in the Northwest Atlantic

6. Federal/Tribal Coordination: Consult with all involved Tribes on a government-to-government basis.

6.1 Engage with Tribes on a regular basis to assure that Federal agencies meet their full and appropriate tribal trust responsibilities. This may be accomplished by, for example, holding regularly scheduled meetings as well as through the development and implementation of the SHRU workplans.

6.2 Ensure that the Penobscot Indian Nation continues to share co-management responsibility of Atlantic salmon. PIN, the State of Maine, and the Services will continue to oversee governance of Atlantic salmon recovery efforts.

7. Outreach, Education, and Engagement: Collaborate with partners and engage interested parties in recovery efforts for the GOM DPS.

7.1 Improve stakeholder and public knowledge of ecosystem restoration and sea-run fish resources in Maine. NGOs and agencies will work to develop coordinated outreach media content to inform and educate.

7.2 Develop a Web site where basic information about all sea run fish, including their biology, ecology, conservation can be accessed. The Web site should include an extensive photo /video library with activities/resources of partner NGOs and agencies.

- 7.3 Involve interested parties in the development and updating of SHRU-based workplans.** In-depth information about SHRU-based workplans and their implementation and SHRU-level meetings should be posted on the site.
- 7.4 As appropriate, continue existing outreach programs in coordination with partners.** This may include Salmon in School and Fish Friends programs, hatchery outreach programs, and Friend of the Craig Brook and Green Lakes Hatcheries programs. It will include new contacts, materials, and Web-based resources as needed.
- 7.5 Collaborate on preparation of outreach materials.** Video shorts will be developed for posting on the website and Facebook regarding sea-run resources and restoration activities. In addition, portable exhibits about ecosystem restoration, sea-run fish ecology will be created. This will also include an interactive mapping tool that shows growth of connected habitat and includes data about adult returns and other highlights of recovery efforts. Implementation plans, meeting announcements and agendas, presentation materials, calendars of meetings, meeting minutes, and other recovery-related materials will also be posted.
- 7.6 Participate in key outreach events with representatives from the full range of sea run fish restoration partners.** Atlantic salmon conservation partners will join the agencies in highlighting the fish’s biology and efforts at its restoration.
- 7.7 Connect Atlantic salmon recovery action teams with stakeholders and other members of the public.** Stakeholders have expressed concern about opportunities for engagement with Federal, State, and Tribal scientists working on Atlantic salmon recovery activities. Significant gains can be made toward rectifying this through active involvement of stakeholders in the Outreach Group, which acts as the liaison with other action teams for sea-run fish restoration outreach activities, use of social media, and more.
- 7.8 Encourage participation in the activities coordinated by the Connectivity Action Team.** This could include citizen science surveys, barrier removal, installation of large woody debris, and volunteering to assist in NGO-sponsored restoration work.
- 7.9 Provide training, for stakeholders and others, about Atlantic salmon recovery activities.** This could include training such as how to build fish-friendly road/stream crossings, thus promoting consideration by landowners, municipal officials, and other stakeholders about incorporating fish-friendly designs into their road-stream crossing maintenance actions.
- 7.10 Continue to support Stream Smart training.** If warranted, “next steps” training sessions should be developed.

7.11 Coordinate recovery activities and explain Endangered Species requirements to involved and interested parties. Working within a set governance structure, annually coordinate activities within and among SHRUs, rangewide activities such as research, and activities within the estuarine and marine portions of the range. To facilitate effective coordinations, natural resource professionals will be more effective in administration of the ESA through interacting with an informed public and supportive stakeholders. Upon request, develop and provide training courses, seminars, and presentations to clarify ESA protections for Atlantic salmon.

B. Action Implementation

The following DPS-wide implementation table provides the action priorities (see Box 3), listing factors (see Box 2 in section D, Threats to Species Viability), recovery phases (see Part II), time frames, 5-year costs, and responsible parties for the recovery actions described above.

Action priority numbers and recovery phases are closely aligned. Recovery phases are, however, based additionally on operational considerations such as feasibility and the need to complete one action in order to begin implementing another. For instance, research on marine survival needs to be well underway or completed before effective management actions can commence, despite

Box 3. RECOVERY ACTION PRIORITY NUMBERS

Priority 1: An action that must be taken to prevent extinction or to prevent the species from declining irreversibly.

Priority 2: An action that must be taken to prevent a significant decline in species population/habitat quality, or some other negative impact short of extinction,

Priority 3: All other actions necessary to provide for the full recovery of the species.

the need to maintain adequate marine survival rates to prevent extinction; in this case, some Priority 1 actions may not be included in Recovery Phase 1.

Note that the time frames and costs take the entire recovery period into account and thus provide the information needed for Part IV of this plan. It should also be noted that each recovery action either addresses one or more of the five listing factors *or* is directly related to arresting and reversing declining population trends in order to meet the biological recovery criteria in Part III of the plan.

For those recovery actions that are geographically based, the actions in this table will tier down to [SHRU-based workplans](#) with site-specific activities with a 5-year horizon. Regularly scheduled SHRU-based meetings to identify potential projects and report on past accomplishments.

In addition to NOAA-NMFS and USFWS, Maine DMR, and the PIN, key recovery collaborators include as of 2015e: , American Rivers, Appalachian Mountain Club, Atlantic Salmon Federation, Downeast Land Trust, Downeast Salmon Federation, Ducks Unlimited, Environmental Protection Agency, Fisheries Improvement Network, Forest Products Council, Forest Society of Maine, Huber, Inc, Keeping Maine's Forests, Maine Audubon, Maine Department of Environmental Resources, Maine Department of Inland Fisheries and Wildlife, , Maine Department of Transportation, Maine Forest Service, Maine Rivers, Maine Tree Foundation, Natural Resources Conservation Service, Natural Resources Council of Maine, , Penobscot River Restoration Trust, Project SHARE, Sewell, Inc., The Nature Conservancy , Trout Unlimited, University of Maine Cooperative Extension Service, U.S. Geological Survey, University of Maine; and the U.S. Army Corps of Engineers, among many others.

**Table 1.
GOM DPS of ATLANTIC SALMON
DPS-WIDE RECOVERY IMPLEMENTATION TABLE**

Action Number	Listing Factor	Recovery Phase	Action Priority	Action Description	Action Duration	Costs	Responsible/Contributing Parties
1.1	A	2	2	Identify and prioritize highest-priority fish passage barriers for remediation.	Complete	\$10,000	NOAA, USFWS
1.2	A	2	2	Perform fish passage barrier assessments throughout the GOM DPS.	Ongoing	\$150,000	NOAA, USFWS
1.3	A	2	2	Determine the feasibility of connectivity projects important to Atlantic salmon.	Ongoing	\$250,000	NOAA, USFWS USDA-NRCS NGOs Private citizens
1.4	A	2	2	Conduct engineering studies for potential fish passage improvement projects.	Ongoing	\$250,000	NOAA, USFWS USDA-NRCS NGOs Private citizens
1.5	A, D	2, 3	2	Permit potential fish passage improvement projects.	Ongoing	\$50,000	NOAA, USFWS State agencies Municipalities
1.6	A	2, 3	2	Remove dams according to the prioritization guidelines, as feasible.	Ongoing	\$17,500,000	NOAA, USFWS FERC, USDA-NRCS MDMR, other State agencies PIN Dam owners NGOs Private citizens

1.7	A	2, 3	2	Remove or replace culverts according to the prioritization guidelines, as feasible.	Ongoing	\$18,750,000	NOAA, USFWS Federal Highways, USDA-NRCS, FEMA PIN MDOT Culvert owners NGOs Private citizens
1.8	A	2, 3	2	Install fishways according to the prioritization guidelines, as feasible.	Ongoing	\$3,750,000	NOAA, USFWS FERC, USDA-NRCS State agencies Dam owners NGOs Private citizens
1.9	A, D	2	1	Establish fish passage efficiency targets that do not "jeopardize the continued existence" of the GOM DPS.	1-5 years	\$500,000	NOAA FERC Dam owners
1.10	A, D	2, 3	1	Enforce fish passage efficiency targets developed under action 1.9.	Ongoing	\$5,000,000	NOAA, USFWS FERC Dam owners
1.11	A, D	2	1	Establish accessible upstream passage criteria for road stream crossings.	1-5 years	\$50,000	USFWS
1.12	A	2, 3	1	Implement upstream passage criteria at road stream crossings through ESA consultation and permitting actions.	Ongoing	\$625,000	NOAA, USFWS Federal Highways, USDA-NRCS State agencies
1.13	A	2	2	Conduct pre- and post- barrier removal and fish passage improvement monitoring using up-to-date methods.	Ongoing	\$750,000	NOAA, USFWS Dam owners Road crossing owners Interested citizens
2.1	A	2	1	Genetically monitor Atlantic salmon.	Ongoing	\$1,502,000	USFWS, NOAA MDMR DSF

2.2	A	2	1	Prioritize ongoing genetic data analysis needs with respect to management goals.	Ongoing	\$20,000	USFWS
2.3	A	2	2	Conduct a gap analysis to determine if additional areas of genetic study are needed.	Ongoing	\$32,500	USFWS, NOAA MDMR
2.4	A	2	1	Manage data resulting from production, stocking, and genetic evaluation to facilitate program assessment and monitoring.	Ongoing	\$32,500	USFWS
2.5	A	2	1	Genetically analyze and evaluate management practices relating to DPS recovery.	Ongoing	\$1,001,000	USFWS MDMR
2.6	A	2	2	Use genetic analyses to inform and improve best hatchery management practices.	Ongoing	\$240,000	USFWS MDMR DFS
2.7	A	2	1	Implement stocking practices that broadly distribute genetic groups (families) throughout the stocking sites.	Ongoing	\$15,000	USFWS MDMR
2.8	A	2	1	Implement the practices identified in the broodstock management plan to maintain genetic diversity for each broodstock.	Ongoing	\$54,000	USFWS MDMR
2.9	A	2	1	Implement collection practices that obtain representative genetic variation.	Ongoing	\$90,000	USFWS MDMR
2.10	A	2	1	Evaluate, improve, and enhance the hatchery product and broodstock management practices in experimental environments outside of hatchery production requirements.	As needed	\$350,000	USFWS
2.11	A	2	1	Screen incoming parr and adults for aquaculture escapees.	Ongoing	\$70,000	USFWS
2.12	A	2	1	Prevent aquaculture adults from entering rivers.	Ongoing	\$435,000	USFWS, NOAA MDMR
3.1	C	N/A	2	Conduct Annual Fish Health, Disease, and Biosecurity Activities related to conservation hatcheries annual activities.	Ongoing	\$760,000	USFWS

3.2	-- ⁴	2	1	As long as needed, maintain captive brood populations for DPS rivers.	Ongoing	\$2,100,000	USFWS MDMR
3.3	--	2	1	Maintain sea-run based broodstock for the Penobscot River through annual transport, holding, and spawning of adults returning to the river.	Ongoing	\$125,000	USFWS
3.4	--	2	1	Maintain and spawn Penobscot River domestic broodstock, including stocking activities, as needed.	Ongoing	\$225,000	USFWS
3.5	--	2	2	As appropriate, annually collect salmon parr from the Penobscot River to maintain brood.	Ongoing	\$180,000	USFWS MDMR
3.6	--	2	3	Investigate feasibility of developing river specific broods for Kennebec and Androscoggin rivers.	Through 2016	\$25,000	USFWS, NOAA MDMR
3.7	--	2	3	Stock adult spent brood into river of origin.	Ongoing	\$130,000	USFWS
3.8	--	2	2	As appropriate, provide eggs to the Pleasant River and East Machias River hatcheries for the purpose of increased biosecurity for these broods.	Ongoing	\$60,000	USFWS MDMR ASF, DFS
3.9	A, B	2	2	As necessary, produce Atlantic salmon necessary to implement upstream and downstream fish passage studies at hydroelectric and other fish passage structures/barriers within the GOM DPS.	Duration of studies	\$1,000,000 (dependent on numbers and life stage)	USFWS, NOAA Private industry
3.10	A-E	2	3	Mark significant number of smolt/parr releases.	Ongoing	\$300,000	USFWS, NOAA MDMR NGOs

⁴ Actions 3.2-3.3 do not address the five listing factors; rather, they constitute a transitional population management program to bolster salmon numbers and distribution.

3.11	A-E	2	3	Enumerate smolt migration from freshwater rearing habitats.	Ongoing	\$600,000	NOAA MDMR NGOs
3.12	A-E	2	3	Monitor and assess instream fry and parr.	Ongoing	\$1,000,000	MDMR
4.1	A	1	3	Implement a DPS-wide juvenile salmon sampling plan.	Ongoing	\$850,000	USFWS MDMR
4.2	A	1	3	Implement a smolt production evaluation program in selected rivers.	Ongoing	\$1,000,000	MDMR
4.3	A	3	3	Monitor reaches for natural re-colonization and redds.	Ongoing	\$25,000	MDMR
4.4	A	1, 2, 2	3	Monitor environmental limiting factors.	Ongoing	\$150,000	MDMR
4.5	A	1, 2	3	Identify areas for riparian habitat improvement and management.	Ongoing	\$25,000	MDMR USFWS
4.6	A	2	3	Pursue resources for riparian zone restorations through grant writing and the help of NGO partners.	Ongoing	\$25,000	USFWS
4.7	A	1	3	Develop, implement, and update a reintroduction plan using data from sampling and habitat utilization monitoring.	Phase 1-2	\$20,000	USFWS MDMR
4.8	E	1, 2	1	Monitor for aquaculture escapees and respond as needed .	Ongoing	\$80,000	NOAA USFWS
4.9	A	1, 2, 3	2	Stock/reintroduce hatchery products according to strategic stocking plan/reintroduction plan.	Phases 1-3	\$500,000	USFWS MDMR
4.10	C	1	3	Assess impacts of avian, piscine, and mammalian predation on DPS salmon.	Ongoing	\$75,000	USFWS MDMR
4.11	C	1	3	Develop a strategic plan for minimizing predation.	Ongoing	\$20,000	USFWS MDMR
4.12	A	2	3	Develop strategic plans for freshwater habitat management and restoration.	Phases 1-2	\$30,000	USFWS MDMR
4.13	A	2	3	Implement freshwater habitat management and restoration projects.	Phases 2-3	\$5,000,000	USFWS
4.14	E	1	3	Develop and implement studies of the ecological role of coevolved diadromous species.	Phases 1-3	\$75,000	NOAA USFWS

4.15	A	1	3	Monitor the effectiveness of CWA State water quality standards for salmon waters.	Ongoing	\$50,000	USFWS NOAA
4.16	B	1	3	Monitor, evaluate, and engage in review of introduced species stocked as sport fish in or near salmon waters.	Ongoing	\$75,000	USFWS MDMR
4.17	A	1	2	Fully engage in Federal permit review of actions that may affect/impact salmon, and coevolved diadromous fish and their habitats.	Ongoing	\$120,000	USFWS MDMR
4.18	A	2	2	Establish and implement an in-lieu-fee-based mitigation program targeted at unavoidable impacts to streams and rivers.	Ongoing	\$100,000	<u>USFWS</u>
5.1	A, E	2	2	Reduce effects of human activities on migratory smolts in estuary, coastal, and Northeast Shelf Domestic waters.	Ongoing	\$480,000	NOAA Private and public landowners, including municipalities
5.2	E	2	1	Continue active U.S. management role at NASCO to improve at-sea distant water survival of Atlantic salmon through reduction of fishing mortality and evaluation of drivers of natural mortality at sea.	Ongoing	\$981,000	NOAA ASF, ISFA, Dept. of State
5.3	E	2	2	Integrate recent estuary-coastal salmon science findings into operational fish and habitat management activities while continuing studies to better understand the location and mechanisms of estuarine-coastal mortality.	Ongoing	\$996,000	NOAA MDMR ASF and other partners
5.4	E	2	2	Minimize impacts of climate change and marine prey base shifts by managing salmon populations for resilience.	Ongoing	\$216,000	NOAA MDMR
6.1	E	1, 2, 3	1	Engage with Tribes on a regular basis to assure that Federal agencies meet their full and appropriate tribal trust responsibilities .	Ongoing	--	NOAA, USFWS
6.2	E	1, 2, 3	1	Ensure that the Penobscot Indian Nation continues to share co-management responsibility of Atlantic salmon.	Ongoing	--	NOAA, USFWS, MDMR

7.1	E	2, 3, 4	3	Improve stakeholder and public knowledge of ecosystem restoration and sea run fish resources in Maine.	Ongoing	\$40,000	NOAA, USFWS MDMR PIN NGOs
7.2	E	2, 3	3	Develop a Web site where basic information about all sea run fish, including their biology, ecology, and conservation, can be accessed.	Completed; updating ongoing	\$40,000	USFWS
7.3	E	2, 3	3	Involve interested parties in the development and updating of SHRU-based workplans.	Ongoing	\$10,000	NOAA, USFWS
7.4	E	2, 3	3	As appropriate, continue existing outreach programs in coordination with partners.	Ongoing	\$140,000	USFWS TNC, DSF
7.5	E	2, 3	3	Collaborate on preparation of outreach materials.	Ongoing	\$60,000	NOAA, USFWS NGOs
7.6	E	3	3	Participate in key outreach events with representatives from the full range of sea run fish restoration partners.	Ongoing	\$60,000	NOAA, USFWS NGOs
7.7	E	2, 3, 4	3	Connect recovery action teams with stakeholders and other members of the public.	Ongoing	\$110,000	NOAA, USFWS NGOs
7.8	E	3	3	Encourage participation in the activities coordinated by the Connectivity Action Team.	Ongoing	\$10,000	USFWS, NOAA MDMR
7.9	E	4	3	Provide training, for stakeholders and others, about Atlantic salmon recovery activities.	1-5 years	\$50,000	USFWS, NOAA MDMR NGOs
7.10	E	3	3	Continue to support StreamSmart training.	1-5 years	\$40,000	USFWS, NOAA Maine Audubon, other NGOs
7.11	E	3	3	Coordinate recovery actions and explain Endangered Species requirements to involved and interested parties.	1-5 years	\$410,000	USFWS, NOAA

Comment [A1]: This row needs to be completed

PART V. TIME AND COST ESTIMATES

A. Time to Delisting

A 75-year timeframe is projected for recovery of the Gulf of Maine DPS of Atlantic salmon. This accounts for approximately 15 generations of salmon and assumes an estimated upper limit for resource investment into implementation of recovery actions. It should be noted that both this time estimate and the cost estimate below are unavoidably speculative, given the uncertainties surrounding recovery of this DPS.

B. Cost of Recovery

Estimated costs in the preceding Implementation Table include project, staff, and operating costs (in excess of base budgets) for the next 5 years, with a total 5-year cost of \$70,214,000. Assuming that that costs of the various actions will accrue unevenly, and further, that costs will diminish over time as projects are completed and best management practices are implemented, the cost over 75 years is roughly estimated to be one-third of the fully accrued cost, amounting to a total cost of recovery of \$351,070,000.

We strongly emphasize that this figure involves a high degree of uncertainty about the actual trajectory recovery will take over the long term. It is therefore highly subject to change and should not be used with any intent other than meeting our legal requirement to provide society with our bests understanding of the general level of effort and expense that might be needed to meet the ultimate recovery goal of delisting.

It is also important to note the costs involved in implementing recovery actions for the GOM DPS of Atlantic salmon will also provide other vital ancillary benefits. These include but are not limited to conservation of other diadromous species in the Gulf of Maine, improved water quality and flow in salmon rivers, an enhanced understanding of sustainable management for numerous aquatic resources, and a reduction of stressors that affect not only Atlantic salmon but general environmental quality. Thus, although the recovery program for the GOM DPS does not include any actions that do not directly benefit DPS salmon, neither does it preclude other important effects of these actions.

PART VI. LITERATURE CITED

The information and recommendations in this plan are based on a plethora of published technical papers and agency documents relating to Atlantic salmon biology, threats, and conservation. The literature cited in this section is limited to sources that refer to status and policy documents to which this plan directly responds.

Baum, E.T. 1997. Maine Atlantic salmon: A national treasure. Atlantic Salmon Unlimited. 224 pp.

Fay, C, M. Bartron, S. Craig, A. Hecht, J. Pruden, R. Saunders, T. Sheehan, and J. Trial. 2006. Status review for anadromous Atlantic salmon (*Salmo salar*) in the United Service. 294 pp.

Federal Register (65 FR 69469). 2000. Endangered and threatened species; final endangered status for a distinct population segment of anadromous Atlantic salmon (*Salmo salar*) in the Gulf of Maine. Vol. 65, pp. 69469- 69483.

Federal Register (74 FR 29344). 2009. Determination of endangered status for the Gulf of Maine Distinct Population Segment of Atlantic Salmon; final rule. Vol. 74, pp. 29344-29387.

Federal Register (74 FR 29300). 2009. Designation of critical habitat for the Atlantic Salmon (*Salmo salar*) Gulf of Maine Distinct Population Segment; final rule. Pp. 29300-29341.

Greene, C. H, and A. J. Pershing. 2007. Climate drivers sea change. Science 315, 1084; DOI: 10.1126/science. 1136495.

Intergovernmental Panel on Climate Change. 2013. Climate change 2013: the physical science basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. *In*: Stocker, T.F., D. Qin, G-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Exia, V. Bex, and P.M. Midgley (editors). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. 1535 pages.

IPCC (Intergovernmental Panel on Climate Change). 2001. Climate change 2001: The scientific basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change. J.T. Houghton, Y. Ding, D.J. Griggs, M. Noguer, P.J. Van der Linden, X. Dai, K. Maskell, and C.A. Johnson, eds. Cambridge University Press. Cambridge, UK, and New York, NY, USA. 881 pp.

- McElhany, P., M.H. Ruckelshaus, M.J. Ford, T.C. Wainwright and E.P Bjorkstedt. 2000. Viable salmonid populations and the recovery of evolutionarily significant units. NOAA Technical Memorandum NMFS-NWFSC-42. 156 pp.
- Mills, K.E., A.J. Pershing, T.F. Sheehan and D. Mountain. 2013. Climate and ecosystem linkages explain widespread declines in North American Atlantic salmon populations. *Global Change Biology*. Vol. 19 (10). Pp. 3046-3061.
- NOAA (National Oceanic and Atmospheric Administration). 2009. Biological valuation of Atlantic salmon habitat within the Gulf of Maine Distinct Population Segment. National Marine Fisheries Service, Northeast Region. Gloucester, Massachusetts. 99 pp. + appendices.
- NOAA and USFWS (U.S. Fish and Wildlife Service). 2005. Recovery plan for the Gulf of Maine distinct population segment of Atlantic Salmon (*Salmo salar*). National Marine Fisheries Service, Silver Spring, Maryland, and USFWS Northeast Region, Hadley, Massachusetts.
- NRC (National Research Council). 2003. Atlantic salmon in Maine. National Academy Press. Washington, D.C. 304 pp.
- Shaffer, M.L. and B.A. Stein. 2000. Safeguarding our precious heritage. Pp. 301-321 *in* Precious heritage: The status of biodiversity in the United States. B.A. Stein, L.S. Kutner, and J.S. Adams (eds.). Oxford University Press, Oxford, New York.

APPENDIX: LIST OF POSTED SUPPORTING MATERIALS

- [Statement of Cooperation](#)
- [2015 Atlantic Salmon Recovery Plan](#)
- [Governance Structure](#)
- [Atlantic Salmon Recovery Framework](#)
- [Recovery Proposals](#) Review and Approval Process
- [Multi-agency issue documents, interagency agreements, and international cooperative efforts](#)
- [Threats as of 2009 and associated literature references](#)
- [New and emerging threats](#)
- [Craig Brook](#) and [Green Lake](#) National Fish Hatcheries Websites
- [East Machias Aquatic Resource Center](#) Website
- [Detailed discussion of stakeholder recovery efforts](#)
- [Initial recovery plan \(NOAA and USFWS 2005\)](#)
- [2009 critical habitat rule, Appendix A](#)
- [Population viability analysis](#)
- [SHRU-based workplans](#)
- [Full list of references, including technical references cited on the Web site](#)
- [Glossary](#)

From: Doose, Serena
To: [Parkin, Mary](#)
Cc: [Zicari, Laury](#); [Peter Lamothe](#); [Dan Kircheis - NOAA Federal](#); [Martin Miller](#)
Subject: Re: update salmon plan completion of draft for solicitor review
Date: Friday, July 10, 2015 4:07:04 PM
Attachments: [20150630_recovery_plan_draft_hyperlinks.docx](#)

All,

I've attached the fully hyperlinked version and have added the Tribal document to the online Recovery Plan. I'm out of the office all next week, but can respond to phone calls if you need anything.

Thank you,

Serena Doose
Fish and Wildlife Biologist
Gulf of Maine Coastal Program
4R Fundy Road
Falmouth, ME 04105
(207) 781-8364 ext: 15
Serena_Doose@fws.gov

On Fri, Jul 10, 2015 at 4:24 PM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Serena, a separate page sounds good to me. It could go right after the Governance page, if that sounds like it'll work.

Laury, I'd like Marty to take a look at the FR notice before we send to SOL/GC. We're asking the attorneys to sign off on it, so it'd be good to make sure it passes muster with the RO. In the meantime, I noticed a few typos and small glitches in the draft plan, especially the Executive Summary, while I was preparing the FR notice, so perhaps on Monday I could do a proof of it before we send it off for legal review.

I'd be happy to send these materials to Amanda and talk with Dan about getting them to the NOAA GC next week (by COB Tuesday, hopefully) while folks are at the PL meeting.

Have a great weekend,
Mary

On Fri, Jul 10, 2015 at 2:09 PM, Zicari, Laury <laury_zicari@fws.gov> wrote:

Sorry I am late getting back to you. I vote for a separate page as we may have additional things to add to it in the future. What do you guys think?

AND I will be on travel next week to the project leader meeting but I will have my laptop and can send it to our solicitor once all three pieces are together -- those being the Serena polished linked version of the Plan, the note to reviewers and the FR notice, right?

OR if they are ready this weekend I can send it then. Monday will be a bear as I have to deliver Bailey to the dog spa at 7:30, tear over to work, load up the Malibu and then drive THROUGH BOSTON to Rhode Island. Maybe I can go by way of Newton.

over and out

On Fri, Jul 10, 2015 at 10:57 AM, Doose, Serena <serena_doose@fws.gov> wrote:
Hi Mary,

Where on the website do you want the tribal trust document to be located? Do you want it as a completely separate page, much like the glossary and the references or do you want it under a sub-heading in the table of contents?

Thank you,

Serena Doose
Fish and Wildlife Biologist
Gulf of Maine Coastal Program
4R Fundy Road
Falmouth, ME 04105
(207) 781-8364 ext: 15
Serena_Doose@fws.gov

On Fri, Jul 10, 2015 at 9:06 AM, Parkin, Mary <mary_parkin@fws.gov> wrote:
Hi Serena,

If you could hyperlink the section title, "Tribal Coordination and Collaboration," on p. 5 of the plan to the tribal trust document, that'd be great. Also, I'm attaching the document with the same title bolded -- please post this one.

Dan, when you return, would you check this write-up to make sure everything's ok? I haven't made any edits.

Thanks,
Mary

On Fri, Jul 10, 2015 at 5:46 AM, Doose, Serena <serena_doose@fws.gov> wrote:
Good morning,

In which section of the online Recovery document would you like me to add the Tribal Trust document? Additionally, what would you like me to name the document, specifically?

Thank you,

Serena Doose
Fish and Wildlife Biologist
Gulf of Maine Coastal Program
4R Fundy Road
Falmouth, ME 04105
(207) 781-8364 ext: 15
Serena_Doose@fws.gov

On Thu, Jul 9, 2015 at 10:40 AM, Zicari, Laury <laury_zicari@fws.gov> wrote:

Re: the longer version I was hoping someone would advise us about subsistence versus sustenance.

The Act talks about subsistence as we discussed in the context of the Alaska Native provisions; the dictionary distinguishes between the two terms.

My vote and expectation has been that there would be three public information meetings of some sort, one in each SHRU.

Re: point of contact, let's discuss.

If we were to get this out in July, I have not scheduled any leave in August because of the lawsuit and should be in town and can adjust accordingly. For September, I am on leave the first two weeks of the month so those would not be dates for public info meetings.

We have not identified where but I would suggest the county Whitneyville, SWCD conference room near Machais, someplace in Orono or Bangor (Black Bear Inn or Hilton Garden Inn if available), and Augusta tBDfor the three locations.

So available dates:

August 3-7, 10 - 13, 19 - 21. week of 24th

Sept 14 - 18th -- later gets towards end of year work.....

On Thu, Jul 9, 2015 at 10:17 AM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi all,

Yes, it was supposed to link to the version that Dan provided us on May 27 in the email "Tribal Section." That version is a little longer than the text we now have in the draft plan. Could we go ahead and post it, then if it needs a final edit, Dan could provide next week?

Regarding the FR notice, I didn't have as much time to work on it while on leave as I'd hoped, but I should be able to wrap it up today. I do have two questions about the notice:

1. Should we have both Laury and Dan as contacts for questions, but only Laury/MEFO for receiving comments? That's how I currently have it in the draft notice.
2. Do you want to schedule any informational meetings during the comment period? If so, we should consider including them in the notice.

I'll send you the draft notice today, along with the NTR (I sent you the draft NTR before). Serena, if we can get the tribal section posted, then the plan will be ready for SOL review.

Thanks,
Mary

p.s. Our return flight got delayed last night, meaning we have a longer drive home today than I anticipated, so I'll be off-line until later this afternoon.

On Thu, Jul 9, 2015 at 6:07 AM, Zicari, Laury <laury_zicari@fws.gov> wrote:

Marty & Mary -- Was this supposed to link the longer version of the piece Dan wrote...attacheddid we ever finalize it?

thanks

On Wed, Jul 8, 2015 at 5:09 PM, Doose, Serena <serena_doose@fws.gov> wrote:

All,

I've attached the most recent draft of the Recovery Plan with all requested hyperlinks, except for the one that is supposed to link to the Tribal Coordination and Collaboration page. Where is this page?

Thank you,

Serena Doose
Fish and Wildlife Biologist
Gulf of Maine Coastal Program
4R Fundy Road
Falmouth, ME 04105
(207) 781-8364 ext: 15
Serena_Doose@fws.gov

On Wed, Jul 1, 2015 at 12:39 PM, Zicari, Laury <laury_zicari@fws.gov> wrote:

RE: blanks in table -- Dan completed this task and if he has time today will review the entire plan as will I.

RE: hyperlinks etc.

Serena is jammed for time today and will be on leave until next Monday; I am on leave on Monday, back for part of Tuesday and off again next Wednesday.

She will try to fit in work on the hyperlinks today but if she is unable to complete that she will get back to it on Monday. On Monday I will be en route back from a short vacation weekend and not reachable but for sure on Tuesday we can make sure it goes out, if that works for everyone.

RE: FR notice

Mary will be drafting the FR notice and THAT is what goes to our Solicitor's Office for review, not the draft plan tho I had assumed we would attach it. Is that the case, still?

I will be at a meeting in Portland tomorrow. Should we regroup next Tuesday afternoon (I am on leave on Monday and have a lynx ITP (another top priority) meeting with IFW all morning) or do you want to proceed without me on Monday?

Please let me know and thanks

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

--
Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

--
Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--
Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

--
Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

From: Parkin, Mary
To: [Doose, Serena](mailto:Serena.Doose@fws.gov)
Cc: [Zicari, Laury](mailto:Zicari.Laury@fws.gov); [Peter Lamothe](mailto:Peter.Lamothe@fws.gov); [Dan Kircheis - NOAA Federal](mailto:Dan.Kircheis@fws.gov); [Martin Miller](mailto:Martin.Miller@fws.gov)
Subject: Re: update salmon plan completion of draft for solicitor review
Date: Friday, July 10, 2015 4:13:36 PM

Thanks very much, Serena!
Mary

On Fri, Jul 10, 2015 at 3:13 PM, Doose, Serena <serena_doose@fws.gov> wrote:

All,

I've attached the fully hyperlinked version and have added the Tribal document to the online Recovery Plan. I'm out of the office all next week, but can respond to phone calls if you need anything.

Thank you,

Serena Doose
Fish and Wildlife Biologist
Gulf of Maine Coastal Program
4R Fundy Road
Falmouth, ME 04105
(207) 781-8364 ext: 15
Serena.Doose@fws.gov

On Fri, Jul 10, 2015 at 4:24 PM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Serena, a separate page sounds good to me. It could go right after the Governance page, if that sounds like it'll work.

Laury, I'd like Marty to take a look at the FR notice before we send to SOL/GC. We're asking the attorneys to sign off on it, so it'd be good to make sure it passes muster with the RO. In the meantime, I noticed a few typos and small glitches in the draft plan, especially the Executive Summary, while I was preparing the FR notice, so perhaps on Monday I could do a proof of it before we send it off for legal review.

I'd be happy to send these materials to Amanda and talk with Dan about getting them to the NOAA GC next week (by COB Tuesday, hopefully) while folks are at the PL meeting.

Have a great weekend,
Mary

On Fri, Jul 10, 2015 at 2:09 PM, Zicari, Laury <laury_zicari@fws.gov> wrote:

Sorry I am late getting back to you. I vote for a separate page as we may have additional things to add to it in the future. What do you guys think?

AND I will be on travel next week to the project leader meeting but I will have my laptop and can send it to our solicitor once all three pieces are together -- those being the Serena polished linked version of the Plan, the note to reviewers and the FR notice, right?

OR if they are ready this weekend I can send it then. Monday will be a bear as I have to deliver Bailey to the

dog spa at 7:30, tear over to work, load up the Malibu and then drive THROUGH BOSTON to Rhode Island. Maybe I can go by way of Newton.

over and out

On Fri, Jul 10, 2015 at 10:57 AM, Doose, Serena <serena_doose@fws.gov> wrote:

Hi Mary,

Where on the website do you want the tribal trust document to be located? Do you want it as a completely separate page, much like the glossary and the references or do you want it under a sub-heading in the table of contents?

Thank you,

Serena Doose
Fish and Wildlife Biologist
Gulf of Maine Coastal Program
4R Fundy Road
Falmouth, ME 04105
(207) 781-8364 ext: 15
Serena_Doose@fws.gov

On Fri, Jul 10, 2015 at 9:06 AM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi Serena,

If you could hyperlink the section title, "Tribal Coordination and Collaboration," on p. 5 of the plan to the tribal trust document, that'd be great. Also, I'm attaching the document with the same title bolded -- please post this one.

Dan, when you return, would you check this write-up to make sure everything's ok? I haven't made any edits.

Thanks,
Mary

On Fri, Jul 10, 2015 at 5:46 AM, Doose, Serena <serena_doose@fws.gov> wrote:

Good morning,

In which section of the online Recovery document would you like me to add the Tribal Trust document? Additionally, what would you like me to name the document, specifically?

Thank you,

Serena Doose
Fish and Wildlife Biologist
Gulf of Maine Coastal Program
4R Fundy Road
Falmouth, ME 04105
(207) 781-8364 ext: 15
Serena_Doose@fws.gov

On Thu, Jul 9, 2015 at 10:40 AM, Zicari, Laury <laury_zicari@fws.gov> wrote:

Re: the longer version I was hoping someone would advise us about subsistence versus sustenance. The Act talks about subsistence as we discussed in the context of the Alaska Native provisions; the dictionary distinguishes between the two terms.

My vote and expectation has been that there would be three public information meetings of some sort, one in each SHRU.

Re: point of contact, let's discuss.

If we were to get this out in July, I have not scheduled any leave in August because of the lawsuit and should be in town and can adjust accordingly. For September, I am on leave the first two weeks of the month so those would not be dates for public info meetings.

We have not identified where but I would suggest the county Whitneyville, SWCD conference room near Machais, someplace in Orono or Bangor (Black Bear Inn or Hilton Garden Inn if available), and Augusta TBD for the three locations.

So available dates:

August 3-7, 10 - 13, 19 - 21. week of 24th

Sept 14 - 18th -- later gets towards end of year work.....

On Thu, Jul 9, 2015 at 10:17 AM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi all,

Yes, it was supposed to link to the version that Dan provided us on May 27 in the email "Tribal Section." That version is a little longer than the text we now have in the draft plan. Could we go ahead and post it, then if it needs a final edit, Dan could provide next week?

Regarding the FR notice, I didn't have as much time to work on it while on leave as I'd hoped, but I should be able to wrap it up today. I do have two questions about the notice:

1. Should we have both Laury and Dan as contacts for questions, but only Laury/MEFO for receiving comments? That's how I currently have it in the draft notice.
2. Do you want to schedule any informational meetings during the comment period? If so, we should consider including them in the notice.

I'll send you the draft notice today, along with the NTR (I sent you the draft NTR before). Serena, if we can get the tribal section posted, then the plan will be ready for SOL review.

Thanks,
Mary

p.s. Our return flight got delayed last night, meaning we have a longer drive home today than I anticipated, so I'll be off-line until later this afternoon.

On Thu, Jul 9, 2015 at 6:07 AM, Zicari, Laury <laury_zicari@fws.gov> wrote:

Marty & Mary -- Was this supposed to link the longer version of the piece Dan wrote...attacheddid we ever finalize it?

thanks

On Wed, Jul 8, 2015 at 5:09 PM, Doose, Serena <serena_doose@fws.gov> wrote:

All,

I've attached the most recent draft of the Recovery Plan with all requested hyperlinks, except for the one that is supposed to link to the Tribal Coordination and Collaboration page. Where is this page?

Thank you,

Serena Doose
Fish and Wildlife Biologist
Gulf of Maine Coastal Program
4R Fundy Road
Falmouth, ME 04105
(207) 781-8364 ext: 15
Serena_Doose@fws.gov

On Wed, Jul 1, 2015 at 12:39 PM, Zicari, Laury <laury_zicari@fws.gov> wrote:

RE: blanks in table -- Dan completed this task and if he has time today will review the entire plan as will I.

RE: hyperlinks etc.

Serena is jammed for time today and will be on leave until next Monday; I am on leave on Monday, back for part of Tuesday and off again next Wednesday.

She will try to fit in work on the hyperlinks today but if she is unable to complete that she will get back to it on Monday. On Monday I will be en route back from a short vacation weekend and not reachable but for sure on Tuesday we can make sure it goes out, if that works for everyone.

RE: FR notice

Mary will be drafting the FR notice and THAT is what goes to our Solicitor's Office for review, not the draft plan tho I had assumed we would attach it. Is that the case, still?

I will be at a meeting in Portland tomorrow. Should we regroup next Tuesday afternoon (I am on leave on Monday and have a lynx ITP (another top priority) meeting with IFW all morning) or do you want to proceed without me on Monday?

Please let me know and thanks

--

Laury Zicari

Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region

*U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov*

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

--

*Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov*

--

*Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov*

From: [Nathan Darnall](#)
To: [Donna O'Donnell](#); [Lisa Solberg Schwab](#)
Cc: [Beverly Neiffer](#); [Erin Madson](#)
Subject: RE: Lynx State correspondence letter
Date: Monday, July 13, 2015 8:16:00 AM

I didn't find anything in TAILS related to lynx and recovery plan or SSA. A couple options.

1. Create a bundle and log events
2. Check with lead office (Montana) to see if they have a TAILS record, if so, get permission to update, and add our stuff to theirs.

Nathan

From: O'Donnell, Donna [mailto:donna_odonnell@fws.gov]
Sent: Monday, July 13, 2015 8:04 AM
To: Solberg Schwab, Lisa
Cc: Nathan Darnall; Beverly Neiffer; Erin Madson
Subject: Re: Lynx State correspondence letter

I have been out of the office and this is my first day back - I do not see anything in my inbox - please let me know the status of this correspondence?

Donna O'Donnell
Administrative Support Assistant
U.S. Fish and Wildlife Service - Wyoming ES Office
5353 Yellowstone Road, Suite 308A
Cheyenne, WY 82009
Phone: (307) 772-2374, Ext. 223
Fax: (307) 772-2358
donna_odonnell@fws.gov

On Tue, Jul 7, 2015 at 5:44 PM, Solberg Schwab, Lisa <lisa_solbergschwab@fws.gov> wrote:

Donna and Nathan,

I have completed the requested State Correspondence letter for the lynx SSA. I hasn't been previously entered into TAILS. I was only guessing on the CPA since I don't really know what this correspondence falls under.

Donna, could you put this into TAILS for me?

I can fill in the correspondence information then it can be sent for review, as you can see its a template letter from MT.

Thanks a lot!

Lisa Solberg Schwab
Biologist
USFWS, Wyoming ES Field Office
located at

BLM Pinedale Field Office
1625 W. Pine St.
P.O. Box 768
Pinedale, WY 82941
(307) 367-5340

From: [Belleman, Ann](#)
To: [Zelenak, Jim](#)
Subject: Re: Wisconsin ES Field Supervisor?
Date: Monday, July 13, 2015 8:30:36 AM

Hi Jim,

I know Lisa Mandell responded to you and Jodi on Friday but to follow up on one other point - yes, the MN and WI FOs combined about a year+ ago and Pete Fasbender is the Field Sup for both, Lisa the Deputy. Pete used to be the WI FO Field Sup but after Tony Sullins left MN, the offices were combined. There are now satellite offices (not the official term) in Green Bay and Madison, WI.

Take care - A

Ann Belleman
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Field Office Complex
4101 American Blvd. E
Bloomington, MN 55425-1665

ann_belleman@fws.gov

307-421-5839 (work cell)
(612) 725-3548 (Bloomington, MN)

On Fri, Jul 10, 2015 at 1:53 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Also, if you know of any biologists doing lynx consultations or other lynx work at the Green Bay or East Lansing field offices, please forward those names along to me.

Thanks!

Jim

On Fri, Jul 10, 2015 at 12:04 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi Ann,

Do you know who is the supervisor of the Green Bay ES office? Tam mentioned that several offices there are merging, but I don't remember the details.

We need to have State ES supervisors for all states in the DPS range send out that State coordination letter to State wildlife management agencies soon.

I got a voice mail and left a message when I called the Green Bay ES office a few minutes ago.

Thanks,

Jim

--

Jim Zelenak, Biologist

U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [McCollough, Mark](#)
To: [Reply](#)
Subject: Re: Cardinal SSA ques... - Add: "Simons-Legaard completing lynx ..."
Date: Monday, July 13, 2015 9:17:24 AM
Attachments: [logo.png](#)

Correct. Erin should have the Maine lynx habitat model expanded to most of the ch by this summer, 2015. Mark

On Fri, Jul 10, 2015 at 1:21 PM, Jim Zelenak (Google Docs)
<d+MTE3NTg4NDMyMTI3MDI1NDU0OTc4-MTE1MDM5NjkwMDg5NDg1MDU4NzUw@docs.google.com> wrote:

Jim Zelenak replied to a suggestion on [Cardinal SSA questions_ Lynx_4_28_15 draft.docx](#)



Mark McCollough

Add: "Simons-Legaard completing lynx habitat model for much of Maine in 2014."



Jim Zelenak

2015, right?

You received this email because you are mentioned in this thread. [Change what Google Docs sends you.](#) You can reply to this email to reply to the discussion.

Google

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [Holt, Bryon](#)
To: [Garner, Kim](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Monday, July 13, 2015 9:57:54 AM

Would you send me copies as well.

Thanks.

On Mon, Jul 13, 2015 at 9:46 AM, Garner, Kim <kim_garner@fws.gov> wrote:

Just an FYI that we sent our letters to IDFG and OSC today, I sent e-copies to Jodi.

Kim Garner
Chief, Classification and Recovery Branch
Idaho Fish and Wildlife Office
U.S. Fish and Wildlife Service
1387 S. Vinnell Way, Room 368
Boise, ID 83709
work: (208) 378-5265

On Mon, Jul 13, 2015 at 10:09 AM, Holt, Bryon <bryon_holt@fws.gov> wrote:

Jodi,

Jeff Krupka is out until late this week. I just spoke to Karl Halupka regarding sending letters and advised urgency of getting them out this week if at all possible. At this point I believe that WA FWS will prepare letters to WDFW and WDNR (using template) for Eric's signature and copy me. I will send copies to Jim when I receive them.

Bryon

On Thu, Jul 9, 2015 at 10:59 AM, Hall, Sarah <sarah_hall@fws.gov> wrote:

Hi Jodi,

Just fyi, our R1 ES PLs are at a meeting in Portland this week. It's my understanding that Bryon is working on an ID letter for Mike to sign next week. Bryon is also working with Jeff Krupka on a WA letter for Eric's signature, most likely next week as well. Bryon is out the rest of this week, but hopefully can provide an update early next week.

Thanks,
Sarah

Sarah Hall
Endangered Species Recovery Program Manager
USFWS Pacific Region

On Thu, Jul 9, 2015 at 10:42 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

From: [Odell - DNR, Eric](#)
To: [Zelenak, Jim](#)
Cc: [Broderdorp, Kurt](#); [Jake Ivan](#)
Subject: Re: Results of winter snow tracking
Date: Monday, July 13, 2015 10:42:17 AM

Thanks for the background info, Jim. We'll get you some info about our monitoring effort when it's available.
Eric

On Mon, Jul 13, 2015 at 10:16 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi Eric,

We (Montana FWS office) learned in late March/early April that rather than proceeding with the 5-year review as we'd originally planned, that we would need to apply the Service's relatively new Species Status Assessment (SSA) framework to the lynx DPS. We are in the process of sending out letters to all our State and other partners/interested parties to let folks know about this change and to explain the SSA framework and process - basically a structured and collaborative status and threats assessment intended to result in a single document that will provide the science needed inform all the documents and policy decisions we are required to make in accordance with the ESA. You should see a copy of that letter soon from the FWS in Colorado.

Bottom line is that we hope to complete the SSA report by the end of this calendar year and then begin the recovery planning process to allow enough time to meet the court-ordered deadline for a final recovery plan by Jan. 15, 2018. We will be reaching out to State researchers and managers and other lynx experts over the next few months to elicit the scientific information and expert opinion/professional judgement needed to inform the SSA. Because we have a court order for the recovery plan but not the five-year status review, it is unclear whether or when we will complete the latter, though it should be a natural outgrowth of the SSA process (that's what I'm told anyway).

I look forward to talking to you and Jake about this soon.

Let me know if you have questions/concerns.

Thanks,

Jim

On Mon, Jul 13, 2015 at 9:10 AM, Odell - DNR, Eric <eric.odell@state.co.us> wrote:

We'll get something to you soon. We're just finishing up some data entry, etc and when we have something to share we'll send it your way. What is the 'status' of the 5-year Status review? I was under the impression that that would be complete in June.

Thanks,
Eric

On Thu, Jul 9, 2015 at 2:57 PM, Broderdorp, Kurt <kurt_broderdorp@fws.gov> wrote:

Hey guys, I hope all is well. As you might be aware, the USFWS is working on a species status assessment for Canada lynx. Jim Zelenak asked me about any results from snow tracking last winter, any lynx tracks found, locations, evidence of family groups, etc. Any information you can provide may help us with our task. Thanks.

--

Kurt Broderdorp

445 West Gunnison Avenue
Suite 240
Grand Junction, CO 81501-5720
[\(970\) 628-7186](tel:9706287186)

--

Eric Odell
Species Conservation Program Manager ~ Carnivores
Terrestrial Section



P [970.472.4340](tel:970.472.4340) | F [970.472.4458](tel:970.472.4458) | C [970.217.3915](tel:970.217.3915)
317 West Prospect Road, Fort Collins, CO 80526
eric.odell@state.co.us | cpw.state.co.us

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
[\(406\) 449-5225 ext. 220](tel:4064495225ext220)
jim_zelenak@fws.gov

--

Eric Odell
Species Conservation Program Manager ~ Carnivores
Terrestrial Section



P [970.472.4340](tel:970.472.4340) | F [970.472.4458](tel:970.472.4458) | C [970.217.3915](tel:970.217.3915)
317 West Prospect Road, Fort Collins, CO 80526
eric.odell@state.co.us | cpw.state.co.us

From: [Bush, Jodi](#)
To: [Garner, Kim](#)
Subject: Re: DPS Canada Lynx Letters
Date: Monday, July 13, 2015 11:13:10 AM

great-thanks! JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Mon, Jul 13, 2015 at 10:24 AM, Garner, Kim <kim_garner@fws.gov> wrote:

Hi Jodi, our letters to the state regarding the lynx SSA are being sent today, copies are attached in case you need them for your record.

Kim Garner
Chief, Classification and Recovery Branch
Idaho Fish and Wildlife Office
U.S. Fish and Wildlife Service
1387 S. Vinnell Way, Room 368
Boise, ID 83709
work: (208) 378-5265

----- Forwarded message -----

From: **Stein, Teresa** <teresa_stein@fws.gov>
Date: Mon, Jul 13, 2015 at 10:17 AM
Subject: DPS Canada Lynx Letters
To: Kim Garner <kim_garner@fws.gov>

Kim,
Attached are the DPS Canada Lynx Letters.

Thanks,
Teresa

--
Teresa Stein
Editorial Assistant
Idaho Fish and Wildlife Service
1387 S. Vinnell Way, Suite 368
Boise, ID 83709
Phone: 208-685-6950
Fax: 208-378-5262

From: [Bush, Jodi](#)
To: [Holt, Bryon](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Monday, July 13, 2015 11:15:47 AM

Thanks Bryon. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Mon, Jul 13, 2015 at 10:09 AM, Holt, Bryon <bryon_holt@fws.gov> wrote:

Jodi,

Jeff Krupka is out until late this week. I just spoke to Karl Halupka regarding sending letters and advised urgency of getting them out this week if at all possible. At this point I believe that WA FWS will prepare letters to WDFW and WDNR (using template) for Eric's signature and copy me. I will send copies to Jim when I receive them.

Bryon

On Thu, Jul 9, 2015 at 10:59 AM, Hall, Sarah <sarah_hall@fws.gov> wrote:

Hi Jodi,

Just fyi, our R1 ES PLs are at a meeting in Portland this week. It's my understanding that Bryon is working on an ID letter for Mike to sign next week. Bryon is also working with Jeff Krupka on a WA letter for Eric's signature, most likely next week as well. Bryon is out the rest of this week, but hopefully can provide an update early next week.

Thanks,
Sarah

Sarah Hall
Endangered Species Recovery Program Manager
USFWS Pacific Region

On Thu, Jul 9, 2015 at 10:42 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy

Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA

Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

From: Garner, Kim
To: [Michael Carrier](mailto:Michael.Carrier@fws.gov)
Subject: Fwd: DPS Canada Lynx Letters
Date: Monday, July 13, 2015 11:39:08 AM

I should've cc'd you, I sent these to Jodi earlier.

Kim Garner
Chief, Classification and Recovery Branch
Idaho Fish and Wildlife Office
U.S. Fish and Wildlife Service
1387 S. Vinnell Way, Room 368
Boise, ID 83709
work: (208) 378-5265

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
Date: Mon, Jul 13, 2015 at 11:13 AM
Subject: Re: DPS Canada Lynx Letters
To: "Garner, Kim" <kim_garner@fws.gov>

great-thanks! JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Mon, Jul 13, 2015 at 10:24 AM, Garner, Kim <kim_garner@fws.gov> wrote:

Hi Jodi, our letters to the state regarding the lynx SSA are being sent today, copies are attached in case you need them for your record.

Kim Garner
Chief, Classification and Recovery Branch
Idaho Fish and Wildlife Office
U.S. Fish and Wildlife Service
1387 S. Vinnell Way, Room 368
Boise, ID 83709
work: (208) 378-5265

----- Forwarded message -----

From: **Stein, Teresa** <teresa_stein@fws.gov>

Date: Mon, Jul 13, 2015 at 10:17 AM
Subject: DPS Canada Lynx Letters
To: Kim Garner <kim_garner@fws.gov>

Kim,
Attached are the DPS Canada Lynx Letters.

Thanks,
Teresa

--

Teresa Stein
Editorial Assistant
Idaho Fish and Wildlife Service
1387 S. Vinnell Way, Suite 368
Boise, ID 83709
Phone: 208-685-6950
Fax: 208-378-5262



United States Department of the Interior
U.S. Fish and Wildlife Service

Idaho Fish And Wildlife Office

1387 S. Vinnell Way, Room 368

Boise, Idaho 83709

Telephone (208) 378-5243

<http://www.fws.gov/idaho>



JUL 13 2015

Idaho Governor's Office of Species Conservation

Attn: Dustin Miller, Administrator

304 N. 8th Street, Room 149

Boise, ID 83702

Dear Mr. Miller:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

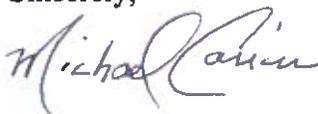
To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Idaho. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Bryon Holt by phone at (509) 893-8014 or via email at bryon_holt@fws.gov.

Sincerely,



Michael Carrier
State Supervisor

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathan Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ



U.S. Fish & Wildlife Service

The Species Status Assessment Framework

An Integrated Framework for Conservation

"The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday's logic."

– Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation's species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species' biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

"The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation."

– Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

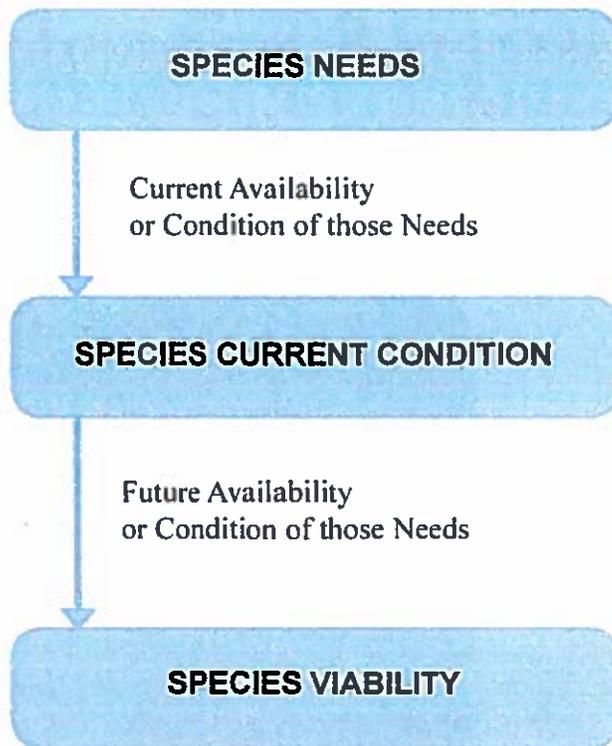
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

**U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171**

March 2014



Gunnison's prairie dog. Credit: USFWS

From: Garner, Kim
To: dustin.miller@osc.idaho.gov
Cc: [Michael Carrier](#); [Leith Edgar](#)
Subject: State coordination re the Lynx Species Status Assessment process
Date: Monday, July 13, 2015 12:20:01 PM
Attachments: [DPS Lynx OSC 07 13 15 \(1\).pdf](#)

Dustin,

On behalf of our State Supervisor Mike Carrier, I'm forwarding a letter explaining the species status assessment (SSA) process the Fish and Wildlife Service is undergoing to evaluate the status of Canada lynx. Monthly calls are scheduled with the states to provide updates and receive input; the time and contact information are included in the attached letter. We appreciate your staff's participation on these calls. Please let me know if you have any questions. Thank you,

Kim

Kim Garner
Chief, Classification and Recovery Branch
Idaho Fish and Wildlife Office
U.S. Fish and Wildlife Service
1387 S. Vinnell Way, Room 368
Boise, ID 83709
work: (208) 378-5265



United States Department of the Interior
U.S. Fish and Wildlife Service

Idaho Fish And Wildlife Office

1387 S. Vinnell Way, Room 368

Boise, Idaho 83709

Telephone (208) 378-5243

<http://www.fws.gov/idaho>



JUL 13 2015

Idaho Department of Fish and Game
Attn: Virgil Moore, Director
P.O. Box 25
Boise, ID 83707

Dear Director Moore:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Idaho. Please be aware that all data and information submitted to us including names and addresses will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Bryon Holt by phone at (509) 893-8014 or via email at bryon_holt@fws.gov.

Sincerely,



Michael Carrier
State Supervisor

Enclosure

Cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathan Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Fraser, HQ



U.S. Fish & Wildlife Service

The Species Status Assessment Framework

An Integrated Framework for Conservation

"The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday's logic."

— Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation's species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species' biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

"The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation."

— Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

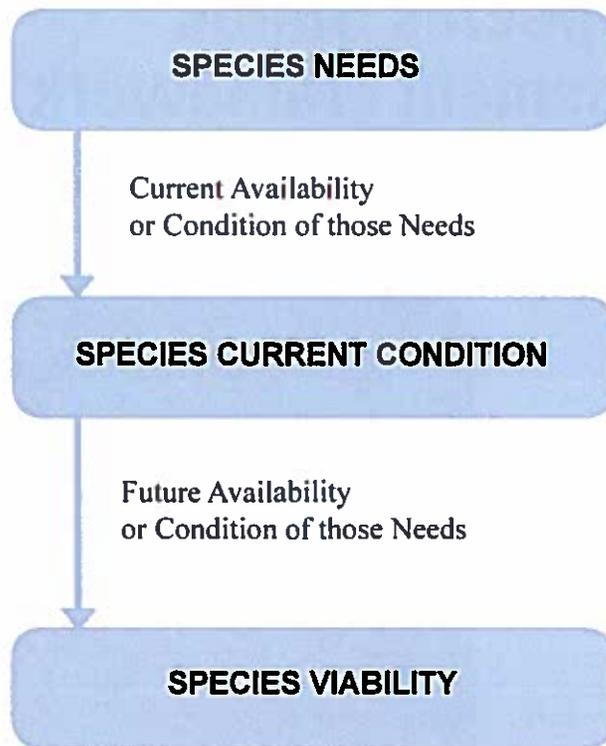
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171

March 2014



Gunnison's prairie dog. Credit: USFWS

From: Garner, Kim
To: virgil.moore@idfg.idaho.gov
Cc: [Michael Carrier](#); [Leith Edgar](#)
Subject: State coordination re the Lynx Species Status Assessment process
Date: Monday, July 13, 2015 12:21:26 PM
Attachments: [DPS Lynx IDFG 07_13_15 \(1\).pdf](#)

Director Moore,

On behalf of our State Supervisor Mike Carrier, I'm forwarding a letter explaining the species status assessment (SSA) process the Fish and Wildlife Service is undergoing to evaluate the status of Canada lynx. Monthly calls are scheduled with the states to provide updates and receive input; the time and contact information are included in the attached letter. We appreciate your staff's participation on these calls. Please let me know if you have any questions. Thank you,

Kim

Kim Garner
Chief, Classification and Recovery Branch
Idaho Fish and Wildlife Office
U.S. Fish and Wildlife Service
1387 S. Vinnell Way, Room 368
Boise, ID 83709
work: (208) 378-5265

From: [Holt, Bryon](#)
To: [Dillon, Jeffrey](#)
Cc: [Hall, Sarah](#); [Rollie White](#)
Subject: Re: Updated Lynx SSA State Coordination Letter
Date: Monday, July 13, 2015 3:39:48 PM

Thanks Jeff.

So that you are aware, I have been named as the "core" team member representative for R-1 for the lynx SSA. Part of my responsibilities are to ensure coordination and dissemination of information to R-1 FOs through the course of this process. Once you have determined who will lead the effort for your office, please let me know so that I can coordinate with them.

Thanks,

Bryon

On Mon, Jul 13, 2015 at 1:06 PM, Dillon, Jeffrey <jeffrey_dillon@fws.gov> wrote:

Rollie forwarded a direct request from Jodi Bush to send letters to all states within the range of Canada lynx (including Oregon). We are working on determining who will lead this for our office.

Jeff

~~~~~  
**Jeffrey A. Dillon, Endangered Species Division Manager**

US Fish and Wildlife Service      Phone: 503.231.6179  
Oregon Fish and Wildlife Office      Fax: 503.231.6195  
2600 SE 98th Avenue, Suite 100      Email: [Jeffrey\\_Dillon@fws.gov](mailto:Jeffrey_Dillon@fws.gov)  
Portland, Oregon 97266      <http://www.fws.gov/oregonfwo>  
~~~~~

On Mon, Jul 13, 2015 at 1:03 PM, Holt, Bryon <bryon_holt@fws.gov> wrote:

Hi Jeff,

Have you had a chance to give any thought to Sarah's question. If you have, and you decide to send a letter(s) to OR, could you please send me an electronic copy of each letter.

Thanks,

Bryon

On Mon, Jul 13, 2015 at 1:01 PM, Holt, Bryon <bryon_holt@fws.gov> wrote:

On Tue, Jul 7, 2015 at 12:11 PM, Hall, Sarah <sarah_hall@fws.gov> wrote:

Hi Jeff,

R6 (Jim Z) hosted a FWS coordination call today to discuss status and next steps for kicking off the SSA process for lynx. He asked about the status of our various FWO's sending out the example letter to our

respective State partners.

Bryon Holt (our R1 lead POC on the Core Team for this effort) is working on the one for ID, and he is coordinating with Jeff Krupka regarding a similar letter for WA.

Do you think it would be appropriate to send a similar letter to OR State folks (see attached example)? If so, who should Bryon coordinate with to assist as appropriate?

Thanks much,
Sarah

Sarah Hall
Endangered Species Recovery Program Manager
USFWS Pacific Region

----- Forwarded message -----

From: **Zelenak, Jim** <jim_zelenak@fws.gov>

Date: Tue, Jul 7, 2015 at 11:02 AM

Subject: Re: Updated State Coordination Letter

To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>, Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

Attached is a corrected version of the template letter for your use.

1. Also highlights top of page 2 where you need to delete "Montana" and put your state;
2. Corrects cc list from "Jonathon" to "Jonathan" Mawdsley
3. Also highlights need to change header from "Dear Director Hagener" to Dear Director (yours).

Let me know if you have questions. Thanks for getting these out.

Jim

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process.

To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelenak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--
Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

From: [Wiley, Nick](#)
To: [Dube, Jeannine](#)
Cc: [jmawdsley](#); [Gary Frazer](#); [Mark McCollough](#); [Laury Zicari](#); [Jodi Bush](#); [Jim Zelenak](#)
Subject: Re: Just an FYI
Date: Tuesday, July 14, 2015 9:19:26 PM

Thank you!

Nick Wiley
Executive Director
Florida Fish and Wildlife Conservation Commission
[MyFWC.com](#)

On Jul 14, 2015, at 3:57 PM, Dube, Jeannine <jeannine_dube@fws.gov> wrote:

When I called NH Fish and Game, I was given the wrong email address for Mr. Normandeau, so it was kicked back to me. His correct email address is glenn.normandeau@wildlife.nh.gov. I subsequently sent the pdf to him at that address.

Jeannine Dube

--

Secretary
New England Field Office
U.S. Fish and Wildlife Service
70 Commercial St., Suite 300
Concord, NH 03301
603-223-2541

"Life does not have to be perfect to be wonderful." Annette Funicello

From: [Zelenak, Jim](#)
To: [Bryon Holt](#); [Jeff Krupka](#)
Subject: Fwd: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Tuesday, July 14, 2015 7:10:21 AM

If you haven't yet sent the letter, please correct spelling in cc list - should be Gary "Frazer" not "Fraser". Thanks.

----- Forwarded message -----

From: **Eric Rickerson** <eric_rickerson@fws.gov>
Date: Mon, Jul 13, 2015 at 5:19 PM
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
To: "Holt, Bryon" <bryon_holt@fws.gov>
Cc: "Hall, Sarah" <sarah_hall@fws.gov>, "Bush, Jodi" <jodi_bush@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Jeff Krupka <jeff_krupka@fws.gov>, Kim Garner <kim_garner@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Karl Halupka <karl_halupka@fws.gov>

Tom McDowell is tracking down the letter and he will sign it on my behalf since I am out of the office. Should go out in next day or two.

EVR

Sent from my iPhone

On Jul 13, 2015, at 9:09 AM, Holt, Bryon <bryon_holt@fws.gov> wrote:

Jodi,

Jeff Krupka is out until late this week. I just spoke to Karl Halupka regarding sending letters and advised urgency of getting them out this week if at all possible. At this point I believe that WA FWS will prepare letters to WDFW and WDNR (using template) for Eric's signature and copy me. I will send copies to Jim when I receive them.

Bryon

On Thu, Jul 9, 2015 at 10:59 AM, Hall, Sarah <sarah_hall@fws.gov> wrote:

Hi Jodi,

Just fyi, our R1 ES PLs are at a meeting in Portland this week. It's my understanding that Bryon is working on an ID letter for Mike to sign next week. Bryon is also working with Jeff Krupka on a WA letter for Eric's signature, most likely next week as well. Bryon is out the rest of this week, but hopefully can provide an update early next week.

Thanks,
Sarah

Sarah Hall
Endangered Species Recovery Program Manager

USFWS Pacific Region

On Thu, Jul 9, 2015 at 10:42 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak - our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush

Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Zelenak, Jim](#)
To: [Smith, Tamara](#)
Subject: Re: Wisconsin ES Field Supervisor?
Date: Tuesday, July 14, 2015 7:11:04 AM

Thanks, tam. I think we are good and that we've tracked everyone down. Talk to you later.

On Tue, Jul 14, 2015 at 7:00 AM, Smith, Tamara <tamara_smith@fws.gov> wrote:
Hi Jim - I'm just catching up on emails after being out of the office for awhile... in case no one replied to this yet...

Peter Fasbender is the Field Supervisor for both the Green Bay and TCFO.

-Tam

On Fri, Jul 10, 2015 at 1:53 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:
Also, if you know of any biologists doing lynx consultations or other lynx work at the Green Bay or East Lansing field offices, please forward those names along to me.

Thanks!

Jim

On Fri, Jul 10, 2015 at 12:04 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:
Hi Ann,

Do you know who is the supervisor of the Green Bay ES office? Tam mentioned that several offices there are merging, but I don't remember the details.

We need to have State ES supervisors for all states in the DPS range send out that State coordination letter to State wildlife management agencies soon.

I got a voice mail and left a message when I called the Green Bay ES office a few minutes ago.

Thanks,

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist

U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East
Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Bush, Jodi](#)
To: [Eric Rickerson](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Tuesday, July 14, 2015 8:00:38 AM

thanks Eric. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Mon, Jul 13, 2015 at 5:19 PM, Eric Rickerson <eric_rickerson@fws.gov> wrote:
Tom McDowell is tracking down the letter and he will sign it on my behalf since I am out of the office. Should go out in next day or two.

EVR

Sent from my iPhone

On Jul 13, 2015, at 9:09 AM, Holt, Bryon <bryon_holt@fws.gov> wrote:

Jodi,

Jeff Krupka is out until late this week. I just spoke to Karl Halupka regarding sending letters and advised urgency of getting them out this week if at all possible. At this point I believe that WA FWS will prepare letters to WDFW and WDNR (using template) for Eric's signature and copy me. I will send copies to Jim when I receive them.

Bryon

On Thu, Jul 9, 2015 at 10:59 AM, Hall, Sarah <sarah_hall@fws.gov> wrote:

Hi Jodi,

Just fyi, our R1 ES PLs are at a meeting in Portland this week. It's my understanding that Bryon is working on an ID letter for Mike to sign next week. Bryon is also working with Jeff Krupka on a WA letter for Eric's signature, most likely next week as well. Bryon is out the rest of this week, but hopefully can provide an update early next week.

Thanks,
Sarah

Sarah Hall
Endangered Species Recovery Program Manager
USFWS Pacific Region

On Thu, Jul 9, 2015 at 10:42 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:
Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak - our Service lynx Lead.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush

Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

From: [Smith, Tamara](#)
To: [Lisa Mandell](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter for Lynx
Date: Tuesday, July 14, 2015 8:22:33 AM

Hi Lisa - I'm just catching up on emails. Please let me know if there is anything that I can do to help. Thanks!

On Fri, Jul 10, 2015 at 4:33 PM, Lisa Mandell <lisa_mandell@fws.gov> wrote:

Jodi – I am working on the correspondence for MN and WI, and just forwarded this to the Field Supervisor at East Lansing – literally moments ago. We'll make sure state directors from MN, MI and WI get the invitation/information.

Lisa

--

Lisa Mandell
Deputy Field Supervisor
U.S. Fish and Wildlife Service
Twin Cities Ecological Services Field Office
4101 American Blvd. East
Bloomington, Minnesota 55425
612-725-3548 x2201

Serving Minnesota and Wisconsin

From: Bush, Jodi [mailto:jodi_bush@fws.gov]
Sent: Friday, July 10, 2015 4:23 PM
To: Peter Fasbender
Cc: Lisa Mandell; Jim Zelenak; Tamara Smith; Ann Belleman
Subject: Fwd: ATTENTION -NEEDS ACTION: Updated State Coordination Letter for Lynx

Peter.

I know you are already engaged in the Lynx Recovery Planning Process because of Minnesota's interest, However because of a high level of interest identified through AFWA and conversations with Gary Frazer, we have determined that **ALL STATES** within the

range of the Lynx DPS should be updated on the status of where we are at with Lynx Recovery Planning. To that end we are asking that you also provide the attached letter and SSA fact sheet to our State counterparts in Wisconsin.

If you have unanswered questions about where we are in the process, please feel free to give me a call so I can catch you up. We also have internal coordination calls on the first Tuesday of every month. August 4th will be the next one from 10-11 MTN time. Thanks for your help. JB

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Thu, Jul 9, 2015 at 11:42 AM

Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter

To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>
Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East
Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

From: [Parkin, Mary](#)
To: [Zelenak, Jim](#)
Subject: Re: Lynx SSA Expert Panel
Date: Tuesday, July 14, 2015 9:59:10 AM

Thanks, Jim. The only trivial suggestion I have (well, maybe not so trivial) is that we use another moniker besides "expert panel." In the SDM world, we're now shying away from that because it triggers adverse reactions from folks who felt that expert panels in earlier high-stakes decisions led to flawed results. Now we tend to stick with "expert involvement" or something equally non-evocative.

On another note, I've been wondering if we should be including Seth on the Monday calls, given his participation in the Denver workshop. My memory's foggy on whether an intentional decision was made about this before.

Talk shortly!
Mary

p.s. I received comments on the talking points from Dave, Jonathan, and Jennifer following yesterday's monthly FIT call. Will incorporate and get to you within an hour or so of the core team call.

On Tue, Jul 14, 2015 at 9:48 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

See draft doc "2015 07 14 DRAFT Lynx SSA Expert Panel Members" uploaded to Lynx SSA drive under SSA.

Also attached here. For discussion on our cal today.

talk to you all in a few.

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

From: [Zelenak, Jim](#)
To: [Hicks, Scott](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter for Lynx
Date: Tuesday, July 14, 2015 1:16:27 PM

Thanks Scott.

If you haven't sent the letter yet, please correct Gary's name on the cc list from "Fraser" to "Frazer."

Thanks,

Jim

On Mon, Jul 13, 2015 at 8:31 AM, Hicks, Scott <scott_hicks@fws.gov> wrote:

Hi Jim,

Chris Mensing leads our coordination with the Forest Service and the 2 Upper Peninsula forests do address lynx although it's been several years since we last documented a lynx in the State.

Scott

U.S. Fish and Wildlife Service
East Lansing Field Office
2651 Coolidge Road, Suite 101
East Lansing, Michigan 48823

Phone: 517-351-6274

Fax: 517-351-1443

On Mon, Jul 13, 2015 at 10:24 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Thanks, Scott.

We hope to have some talking points out in the next day or two - put together by SSA implementation folks - outlining how we anticipate coordinating with states and other partners. We hope these will help if FOs receive questions from state resource agencies.

Does anyone at the East Lansing FO consult on lynx or do other lynx-related work?

Jim

On Mon, Jul 13, 2015 at 7:00 AM, Hicks, Scott <scott_hicks@fws.gov> wrote:

Jodi and Co., no problem, we'll send the MDNR the letter this week, per below.

Scott

U.S. Fish and Wildlife Service
East Lansing Field Office
2651 Coolidge Road, Suite 101
East Lansing, Michigan 48823

Phone: 517-351-6274

Fax: 517-351-1443

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Fri, Jul 10, 2015 at 5:18 PM

Subject: Fwd: ATTENTION -NEEDS ACTION: Updated State Coordination Letter for Lynx

To: Scott Hicks <scott_hicks@fws.gov>

Cc: Tamara Smith <Tamara_Smith@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>

Scott

Because of a high level of interest identified through AFWA and conversations with Gary Frazer, we have determined that **all states** within the range of the Lynx DPS should be updated on the status of where we are at with Lynx Recovery Planning. To that end we also invite you to participate (however you see fit) in our planning process.

In order to make sure we are reaching all states who may have an interest in the outcome of our Lynx Recovery Planning, we request that you send out the following state letter and SSA process document to your respective State Wildlife agency directors ASAP (Please see email below). We are planning on having regularly scheduled monthly calls with our state partners (information in the attached letter) and would like to make sure they are aware of the date and time of the call.

If you have unanswered questions about where we are in the process, please feel free to give me a call so I can catch you up. We also have internal coordination calls on the first Tuesday of every month. August 4th will be the next one from 10-11 MTN time. Thanks for your help. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Thu, Jul 9, 2015 at 11:42 AM

Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter

To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>

Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith

<Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--
Jim Zelenak, Biologist
U.S. Fish and Wildlife Service

Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Zelenak, Jim](#)
To: [Lisa Mandell](#)
Subject: Fwd: ATTENTION -NEEDS ACTION: Updated State Coordination Letter for Lynx
Date: Tuesday, July 14, 2015 1:18:08 PM

Thanks Lisa. If the letters haven't gone out yet, please correct Gary's name on cc list from "Fraser" to "Frazer."

Thanks,

Jim

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
Date: Fri, Jul 10, 2015 at 3:42 PM
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter for Lynx
To: Lisa Mandell <lisa_mandell@fws.gov>
Cc: Peter Fasbender <peter_fasbender@fws.gov>, Scott Hicks <scott_hicks@fws.gov>, Jack Dingledine <jack_dingledine@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Tamara Smith <tamara_smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>

Awesome. Thanks! JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Fri, Jul 10, 2015 at 3:33 PM, Lisa Mandell <lisa_mandell@fws.gov> wrote:

Jodi – I am working on the correspondence for MN and WI, and just forwarded this to the Field Supervisor at East Lansing – literally moments ago. We'll make sure state directors from MN, MI and WI get the invitation/information.

Lisa

--

Lisa Mandell
Deputy Field Supervisor
U.S. Fish and Wildlife Service
Twin Cities Ecological Services Field Office
4101 American Blvd. East
Bloomington, Minnesota 55425

612-725-3548 x2201

Serving Minnesota and Wisconsin

From: Bush, Jodi [mailto:jodi_bush@fws.gov]
Sent: Friday, July 10, 2015 4:23 PM
To: Peter Fasbender
Cc: Lisa Mandell; Jim Zelenak; Tamara Smith; Ann Belleman
Subject: Fwd: ATTENTION -NEEDS ACTION: Updated State Coordination Letter for Lynx

Peter.

I know you are already engaged in the Lynx Recovery Planning Process because of Minnesota's interest, However because of a high level of interest identified through AFWA and conversations with Gary Frazer, we have determined that **ALL STATES** within the range of the Lynx DPS should be updated on the status of where we are at with Lynx Recovery Planning. To that end we are asking that you also provide the attached letter and SSA fact sheet to our State counterparts in Wisconsin.

If you have unanswered questions about where we are in the process, please feel free to give me a call so I can catch you up. We also have internal coordination calls on the first Tuesday of every month. August 4th will be the next one from 10-11 MTN time. Thanks for your help. JB

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
Date: Thu, Jul 9, 2015 at 11:42 AM
Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>
Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov



United States Department of the Interior



FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>

REF: Canada Lynx Species Status Assessment

July 14, 2015

Glenn Normandeau, Director
Fish and Game Department
11 Hazen Drive
Concord, NH 03301

Dear Mr. Normandeau:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with states and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1 pm MT (3 pm EST). Call in information is 866-822-7385, passcode: 5396168.

Glenn Normandeau
July 14, 2015

2

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018 deadline to complete a recovery plan for the lynx DPS.

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in New Hampshire. Please be aware that all data and information submitted to us, including names and addresses, will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Mark McCollough at (207) 866-3344, extension 115, or you may email him at mark_mccollough@fws.gov.

Sincerely yours,



Thomas R. Chapman
Supervisor
New England Field Office

Enclosure

Glenn Normandeau
July 14, 2015

3

cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathan Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Frazer, USFWS, HQ
Mark McCollough, USFWS, Maine Field Office
Lori Zicari, USFWS, Maine Field Office
Jodi Bush, USFWS, Montana Field Office
Jim Zelenak, USFW, Montana Field Office
Reading file

ES: ATur:7-14-15:603-223-2541



U.S. Fish & Wildlife Service

The Species Status Assessment Framework

An Integrated Framework for Conservation

"The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday's logic."

— Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation's species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species' biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

"The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation."

— Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

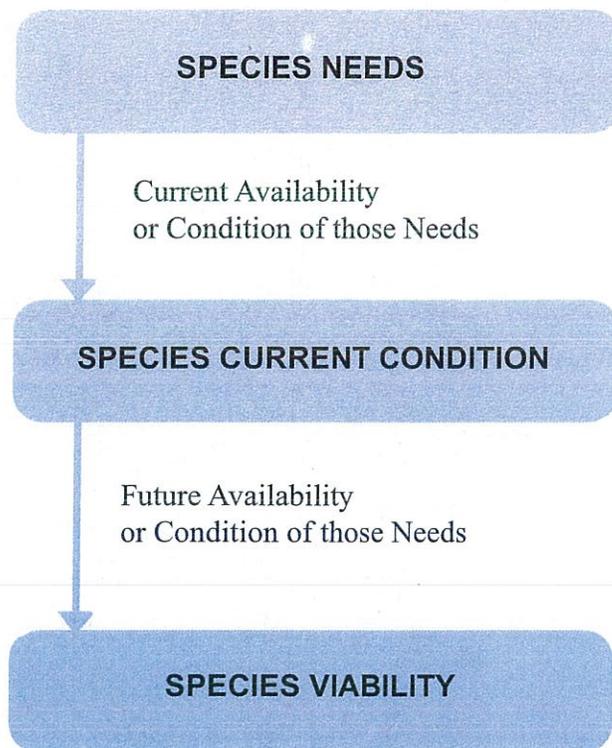
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS



Gunnison's prairie dog. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171

March 2014

From: Dube, Jeannine
To: glenn.d.normandeau@wildlife.nh.gov; [Gary Frazer](#); [Mark McCollough](#); [Laury Zicari](#); [Jodi Bush](#); [Jim Zelenak](#); jmawdsley@fishwildlife.org; nick.wiley@myfwc.com
Subject: Letter Re Canada lynx species status assessment
Date: Tuesday, July 14, 2015 1:44:14 PM
Attachments: [lynx_ssa_ltr-nh.PDF](#)

Please see attached. A hard copy will be mailed only to the addressee tomorrow.

Jeannine Dube

--

Secretary
New England Field Office
U.S. Fish and Wildlife Service
70 Commercial St., Suite 300
Concord, NH 03301
603-223-2541

"Life does not have to be perfect to be wonderful." Annette Funicello

From: [Holt, Bryon](#)
To: [Zelenak, Jim](#)
Subject: Re: WA State lynx expert
Date: Tuesday, July 14, 2015 1:45:09 PM

OK, will do. I also thought about Garth, but noted he was already on your list of potential invitees so I did not comment on him.

Bryon

On Tue, Jul 14, 2015 at 1:43 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Thanks Bryon.

I agree that both Gary and Keith have much to contribute. I also had thought about Apps but haven't reached out to him yet. Could you do so? I've left a phone message for Garth Mowat - a lynx expert in that same geographical area - but I haven't heard back from him yet. let me know what you find out re: Dr. Apps.

Cheers!

Jim

On Tue, Jul 14, 2015 at 12:15 PM, Holt, Bryon <bryon_holt@fws.gov> wrote:

Hi Jim,

Even though we have discussed this already, I am sending this as a follow-up for the record. I would consider that, of the list you provided, Gary Koehler would qualify as a lynx expert. Gary is the only one on the list that has actually done research on lynx in WA. He has done research on lynx in WA off and on for the past 30 to 40 years. The other listed individuals have not done research on lynx that I am aware of, except for Scott Fisher. But, Scott essentially assisted with trapping of lynx on DNR lands in WA (building traps, setting them out, running trap lines, etc.). One other person who I would recommend because of his strong ecological background coupled with his knowledge of lynx biology and ecology as well as boreal forest ecology is Keith Aubry. In my opinion, both Gary and Keith would contribute substantively to the meeting.

Also, Clayton Apps has done some work on lynx in southeastern BC, and southwestern Alberta, Canada if you are looking for a Canadian perspective on the status of lynx. I don't know if he is still active in the lynx world or not, but I could inquire. Let me know.

Bryon

On Thu, Jul 9, 2015 at 7:36 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi Bryon,

Not sure if this is what you intended to track down with Jeff when arranging a call with him during the lynx SSA call the other day, but I'd like to get all of your takes (as soon as possible) on the 1 or 2 folks most knowledgeable about past, current, and likely future distribution and health of the lynx pop(s) in WA, habitat

condition, threats, potential climate-related impacts, fire, insects, etc.

Some of the names that have come up in discussions with others are:

Agency:

- Gary Koehler (retired WDFW)
- Scott Fitkin (WDFW)
- Scott Fisher (WDNR)
- Jeff Lewis (WDFW)

Research scientists:

- Dan Thorton (WSU)
- Aaron Wirsing (WSU)

Let me know who among these - or others - would be the best (and most likely able to attend) person to invite to the lynx SSA expert elicitation meeting we're are trying to arrange for Sept. - Oct. Also who you would select 2nd if your first choice was unable to attend. Keep in mind that we really want science/lynx mgmt. experts who can be objective and unbiased (i.e., not wearing their agency hats or pushing agency agenda with regard to listing and recovery decisions, etc.).

We hope to have some talking points out soon to clarify the last part above.

We need this pretty quickly because we need to begin reaching out soon to candidates for the meeting

Thanks,

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov



United States Department of the Interior



FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>

REF: Canada Lynx Species Status Assessment

July 14, 2015

Mr. Mark Scott
Director of Wildlife
Agency of Natural Resources
1 National Life Drive, Davis 2
Montpelier, Vermont 05620-3901

Dear Mr. Scott:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with states and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1 pm MT (3 pm EST). Call in information is 866-822-7385, passcode: 5396168.

Mr. Mark Scott
July 14, 2015

2

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018 deadline to complete a recovery plan for the lynx DPS.

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Vermont. Please be aware that all data and information submitted to us, including names and addresses, will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Mark McCollough at (207) 866-3344, extension 115, or you may email him at mark_mccollough@fws.gov.

Sincerely yours,



Thomas R. Chapman
Supervisor
New England Field Office

Enclosure

Mr. Mark Scott
July 14, 2015

3

cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathan Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Frazer, USFWS, HQ
Mark McCollough, USFWS, Maine Field Office
Lori Zicari, USFWS, Maine Field Office
Jodi Bush, USFWS, Montana Field Office
Jim Zelenak, USFWS, Montana Field Office
Reading file

ES: ATur:7-14-15:603-223-2541



U.S. Fish & Wildlife Service

The Species Status Assessment Framework

An Integrated Framework for Conservation

"The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday's logic."

– Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation's species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species' biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

"The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation."

– Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

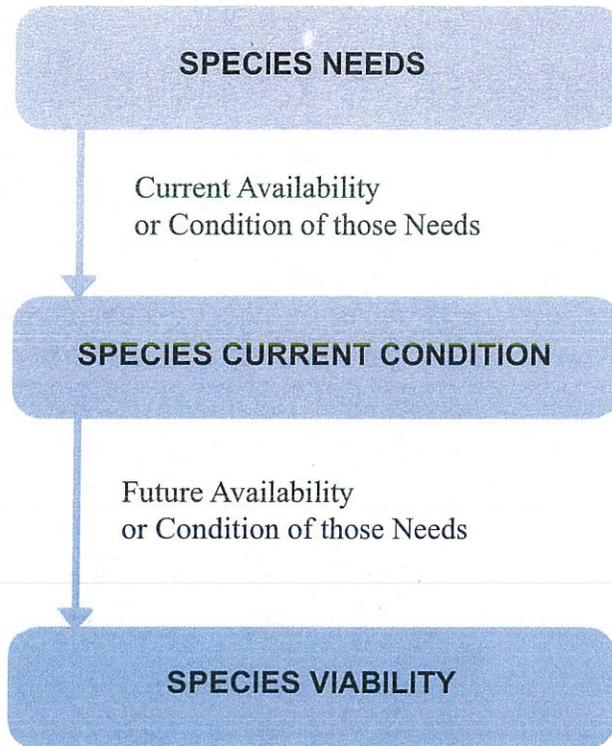
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS



Gunnison's prairie dog. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171

March 2014

From: Dube, Jeannine
To: mark.scott@state.vt.us; [nick.wiley](#); [jmawdsley](#); [Gary Frazer](#); [Mark McCollough](#); [Laury Zicari](#); [Jodi Bush](#); [Jim Zelenak](#)
Subject: Letter re Canada lynx species status assessment
Date: Tuesday, July 14, 2015 2:16:43 PM
Attachments: [lynx_ssa ltr-vt.PDF](#)

Please see attached. A hard copy will be mailed only to the addressee tomorrow.

Jeannine Dube

--

Secretary
New England Field Office
U.S. Fish and Wildlife Service
70 Commercial St., Suite 300
Concord, NH 03301
603-223-2541

"Life does not have to be perfect to be wonderful." Annette Funicello

From: [Smith, Tamara](#)
To: [Laura Ragan](#)
Subject: Re: FW: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Tuesday, July 14, 2015 2:52:24 PM

Hi Laura - We will be sending this out today or tomorrow to WI and MN State DNR Directors and Scott Hicks is doing the same for MI. Thanks! -Tam

On Thu, Jul 9, 2015 at 1:12 PM, Laura Ragan <laura_ragan@fws.gov> wrote:

Tam - Is there anything you need for me on this, or do you plan to just send out the letter?

-Laura

From: Bush, Jodi [mailto:jodi_bush@fws.gov]
Sent: Thursday, July 09, 2015 12:42 PM
To: Eric Rickerson; Michael Carrier; Mark Sattelberg; Ann Timberman; Drue DeBerry; Laury Zicari; Tom Chapman; Wally Murphy; Peter Fasbender
Cc: Jeff Krupka; Bryon Holt; Kurt Broderdorp; Tamara Smith; Ann Belleman; Mark McCollough; Jim Zelenak; Anthony Tur; Seth Willey; Sarah Quamme; Laura Ragan; Krishna Gifford; Eric Hein; Sarah Hall; Michael Thabault; Lisa Mandell
Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

--

Tamara Smith

U.S. Fish and Wildlife Service

Twin Cities Field Office

4101 American Boulevard East

Bloomington, MN 55425

612-725-3548 ext. 2219

612-600-1599 cell

From: Zelenak, Jim
To: Willey, Seth
Subject: Re: Lynx SSA Expert Panel
Date: Tuesday, July 14, 2015 3:07:34 PM

Thanks, Seth - I believe you mentioned that previously. I may email Tanya about her new role and whether she still does any work related to lynx conservation. My thought is that she would be a 3rd alternate for Colorado/S. Rockies if (1) Jake Ivan or (2) Eric Odell could not attend.

On Tue, Jul 14, 2015 at 2:49 PM, Willey, Seth <seth_willey@fws.gov> wrote:

I will leave this to others more knowledgeable than me on such specifics. I would add that Tanya now lives in Nebraska, in a new role with NPS. But you may already know this.

Seth L. Willey
Act Regional ESA Chief
Mountain-Prairie Region
Seth_Willey@fws.gov
303-236-4257

On Tue, Jul 14, 2015 at 9:48 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

See draft doc "2015 07 14 DRAFT Lynx SSA Expert Panel Members" uploaded to Lynx SSA drive under SSA.

Also attached here. For discussion on our cal today.

talk to you all in a few.

--
Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--
Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Smith, Tamara](#)
To: [Katherine Eckel](#)
Cc: [Lisa Mandell](#)
Subject: lynx SSA letters to finalize & sign
Date: Tuesday, July 14, 2015 3:16:17 PM

Hi Kathy,

Please finalize the two letters in S:\IN\Tam - in box\Lynx SSA State Letters and attachment. There is one letter for WI and one for MN. Each letter should include the "SSA Fact Sheet.pdf" attachment.

I think we should send a paper copy to each state director and I will then email pdf copies to everyone that is being cc'd.

Thank you,
Tam

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East
Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

From: [Holt, Bryon](#)
To: [Karl Halupka](#)
Subject: Re: FW: FW: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Tuesday, July 14, 2015 3:54:39 PM

Thanks Karl.

On Tue, Jul 14, 2015 at 3:38 PM, Karl Halupka <karl_halupka@fws.gov> wrote:

Tom's schedule, fyi.

Cheers,

k

Karl Halupka

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

Central Washington Field Office

215 Melody Lane, Suite 103

Wenatchee, WA 98801-8122

Phone: 509-665-3508 x 2001

Fax: 509-665-3509

www.fws.gov/wafwo/

From: McDowell, Tom [mailto:tom_mcdowell@fws.gov]

Sent: Tuesday, July 14, 2015 3:21 PM

To: Karl Halupka

Cc: Eric Rickerson; Jeff Krupka

Subject: Re: FW: ATTENTION -NEEDS ACTION: Updated State Coordination Letter

Thanks so much Karl.

I am reviewing and will get back you Thursday. We will plan to sign by Friday at the latest.

Tom

Thomas L. McDowell

Deputy State Supervisor, Washington Fish and Wildlife Office

U.S. Fish and Wildlife Service

510 Desmond Dr. SE, Suite 102

Lacey, WA 98503

Office: 360-753-4652

Cell: 360-951-3756

On Tue, Jul 14, 2015 at 11:41 AM, Karl Halupka <karl_halupka@fws.gov> wrote:

Hi Tom,

Draft letters to WDFW and WDNR regarding our lynx SSA effort are attached, as we discussed yesterday.

Thanks for looking these over, and signing if you think they're ready.

I made only minor tweaks to Jodi's template.

The last CC in each letter is for specific folks in each department who I think are most likely to participate directly or assign staff to participate in our lynx SSA.

Naim is available to send these out today or tomorrow if you want to send back scans of the signed versions.

I also attached the SSA Fact Sheet which is meant to be enclosed with the letters, fyi.

Cheers,

k

Karl Halupka

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

Central Washington Field Office

215 Melody Lane, Suite 103

Wenatchee, WA 98801-8122

Phone: 509-665-3508 x 2001

Fax: 509-665-3509

www.fws.gov/wafwo/

From: Holt, Bryon [mailto:bryon_holt@fws.gov]

Sent: Monday, July 13, 2015 9:10 AM

To: Hall, Sarah

Cc: Bush, Jodi; Michael Carrier; Eric Rickerson; Jeff Krupka; Kim Garner; Jim Zelenak; Karl Halupka

Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter

Jodi,

Jeff Krupka is out until late this week. I just spoke to Karl Halupka regarding sending letters and advised urgency of getting them out this week if at all possible. At this point I believe that WA FWS will prepare letters to WDFW and WDNR (using template) for Eric's signature and copy me. I will send copies to Jim when I receive them.

Bryon

On Thu, Jul 9, 2015 at 10:59 AM, Hall, Sarah <sarah_hall@fws.gov> wrote:

Hi Jodi,

Just fyi, our R1 ES PLs are at a meeting in Portland this week. It's my understanding that Bryon is working on an ID letter for Mike to sign next week. Bryon is also working with Jeff Krupka on a WA letter for Eric's signature, most likely next week as well. Bryon is out the rest of this week, but hopefully can provide an update early next week.

Thanks,

Sarah

Sarah Hall

Endangered Species Recovery Program Manager

USFWS Pacific Region

On Thu, Jul 9, 2015 at 10:42 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov



United States Department of the Interior



FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>

REF: Canada Lynx Species Status Assessment

July 14, 2015

Mr. Mark Scott
Director of Wildlife
Agency of Natural Resources
1 National Life Drive, Davis 2
Montpelier, Vermont 05620-3901

Dear Mr. Scott:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with states and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your department and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1 pm MT (3 pm EST). Call in information is 866-822-7385, passcode: 5396168.

Mr. Mark Scott
July 14, 2015

2

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to complete the SSA report by December of 2015 and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018 deadline to complete a recovery plan for the lynx DPS.

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Vermont. Please be aware that all data and information submitted to us, including names and addresses, will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your department throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Mark McCollough at (207) 866-3344, extension 115, or you may email him at mark_mccollough@fws.gov.

Sincerely yours,



Thomas R. Chapman
Supervisor
New England Field Office

Enclosure

Mr. Mark Scott
July 14, 2015

3

cc: Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA
Jonathan Mawdsley, Fish and Wildlife Science Coordinator, AFWA
Gary Frazer, USFWS, HQ
Mark McCollough, USFWS, Maine Field Office
Lori Zicari, USFWS, Maine Field Office
Jodi Bush, USFWS, Montana Field Office
Jim Zelenak, USFWS, Montana Field Office
Reading file

ES: ATur:7-14-15:603-223-2541



U.S. Fish & Wildlife Service

The Species Status Assessment Framework

An Integrated Framework for Conservation

"The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday's logic."

– Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation's species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species' biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

"The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation."

– Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

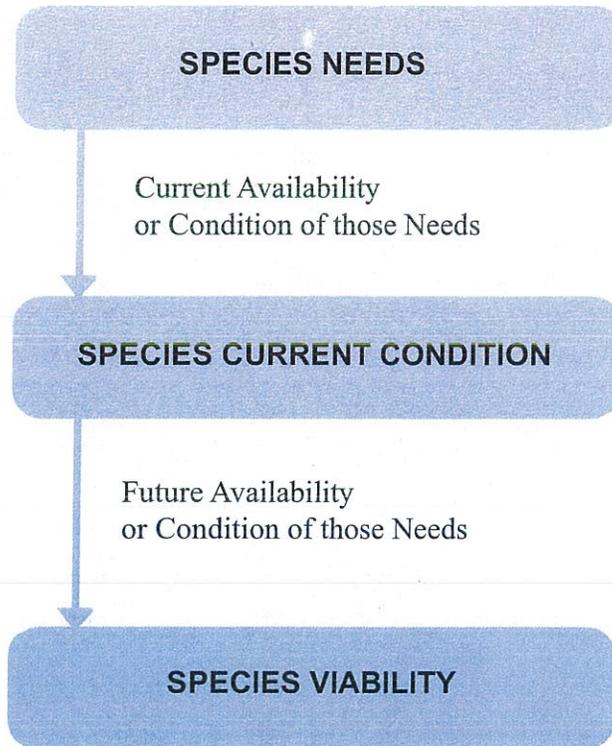
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS



Gunnison's prairie dog. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171

March 2014

From: McCollough, Mark
To: [Jodi Bush](#); [Jim Zelenak](#); [Laury Zicari](#)
Subject: Fwd: Letter Re Canada lynx species status assessment
Date: Wednesday, July 15, 2015 6:49:33 AM
Attachments: [lynx ssa ltr-nh.PDF](#)

Jodi and Jim:

Letters concerning the lynx SSA were sent by the New England Field Office to state directors and New Hampshire and Vermont Fish and Wildlife agencies yesterday. See email below. I will forward the VT letter for your records also. I see the NEFO copied all the individuals that you requested.

Mark

----- Forwarded message -----

From: **Dube, Jeannine** <jeannine_dube@fws.gov>
Date: Tue, Jul 14, 2015 at 3:42 PM
Subject: Letter Re Canada lynx species status assessment
To: glenn.d.normandeau@wildlife.nh.gov, Gary Frazer <gary_frazer@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Jodi Bush <jodi_bush@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, jmawdsley@fishwildlife.org, nick.wiley@myfwc.com

Please see attached. A hard copy will be mailed only to the addressee tomorrow.

Jeannine Dube

--

Secretary
New England Field Office
U.S. Fish and Wildlife Service
70 Commercial St., Suite 300
Concord, NH 03301
603-223-2541

"Life does not have to be perfect to be wonderful." Annette Funicello

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709

mark_mccollough@fws.gov

From: [Zelenak, Jim](#)
To: [McCollough, Mark](#)
Cc: [Jodi Bush](#); [Laury Zicari](#)
Subject: Re: Letter re Canada lynx species status assessment
Date: Wednesday, July 15, 2015 7:09:44 AM

Thanks Mark.

We did receive these from NEFO. Think we will also see one from NYFO soon.

On Wed, Jul 15, 2015 at 6:49 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:
The Vermont letter.

----- Forwarded message -----

From: **Dube, Jeannine** <jeannine_dube@fws.gov>
Date: Tue, Jul 14, 2015 at 4:15 PM
Subject: Letter re Canada lynx species status assessment
To: mark.scott@state.vt.us, "nick.wiley" <nick.wiley@myfwc.com>, jmawdsley <jmawdsley@fishwildlife.org>, Gary Frazer <gary_frazer@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Jodi Bush <jodi_bush@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>

Please see attached. A hard copy will be mailed only to the addressee tomorrow.

Jeannine Dube

--
Secretary
New England Field Office
U.S. Fish and Wildlife Service
70 Commercial St., Suite 300
Concord, NH 03301
603-223-2541

"Life does not have to be perfect to be wonderful." Annette Funicello

--
Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Holt, Bryon](#)
To: [Zelenak, Jim](#)
Subject: Re: Lynx SSA
Date: Wednesday, July 15, 2015 7:13:00 AM

Yes, He retired from FS last year and is still working up some wolverine data, has some other commitments, and is professor emeritus as UW. So, he's trying to retire, but has a lot of standing commitments and does not want to take on anything else.

Bryon

On Wed, Jul 15, 2015 at 6:01 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Thanks Bryon. Did he say why?

On Tue, Jul 14, 2015 at 3:39 PM, Holt, Bryon <bryon_holt@fws.gov> wrote:

Jim,

Keith Aubry has declined to participate in the expert SSA meeting.

Bryon

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service

Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

From: [Parkin, Mary](#)
To: [Bell, Heather](#)
Cc: [Jim Zelenak](#)
Subject: Re: Simple lynx conceptual model, and task for TODAY! (i am such a task master!).
Date: Wednesday, July 15, 2015 7:51:55 AM

Heather, I see the grayling attachment but not the diagram you did. Did you post it on the drive?

Thanks for the boost -- I agree we need to be thinking about the essential question(s) for the EE workshop now. Jim, I'll send some thoughts along today, then perhaps we can have a conversation (or you can just fold them into your conversation) with Dave/Jonathan.

Cheers,
Mary

On Wed, Jul 15, 2015 at 7:41 AM, Bell, Heather <heather_bell@fws.gov> wrote:

1) TAsk for today, Mary could you work with Jim and Dave and get what the ultimate question is we are trying to address in the EXpert meeting drafted for the core team/Seth to comment on? Jim, if you don't hear back from Mary just call DAve and you two can work on it. I would really like to see this before I leave for vacation! That way the review of the cardinal/core questions and which are most important will stand out clearly (less time fumbling around!)

2) Ok guys i did this while we were on the phone, it is nothing fancy and please don't feel you need to use it (in fact I would suggest we do a new one once we have reviewed the cardinal questions), but it will give you an idea of what we are interested in. this is only for resilience and eventually you would add the metrics such as abundance, population growth rate, distribution, but don't worry about that now because we know where those go on the "picture".

I also attached grayling, as one was done for each population, which would mean you could capture the uniqueness of each region ensuring that the specific concerns of each of your core team were captured. You might find in the end you don't need that uniqueness, but it is ALWAYS good to capture people's thoughts and acknowledge that they have been heard.

Jim, if this is good enough to get core folks thinking about what they believe drives Lynx resilience, then send it out to the Core team for them to chew on for the next two weeks, and to determine what they believe would be the top drivers in their region. We could then get that wrapped up as a draft in 2 weeks and get that to Dave/Jennifer. Now, this is s thought. Perhaps this is something we share somehow with the States....

3) Get the criteria for choosing experts!

Heather Bell
Ecological Services HQ

Branch of Conservation Integration
SSA Framework Team Lead
Remotely Located at
134 S. Union Blvd
Lakewood, CO 80228
303-236-4514

Check it out! SSA Framework - Google Site for Staff
at <https://sites.google.com/a/fws.gov/ssa/> and the REV Google
Site: <https://sites.google.com/a/fws.gov/rev/>

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

From: [Bush, Jodi](#)
To: [McCollough, Mark](#)
Cc: [Jim Zelenak](#); [Laury Zicari](#)
Subject: Re: Letter Re Canada lynx species status assessment
Date: Wednesday, July 15, 2015 8:04:12 AM

Thank you! JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 15, 2015 at 6:49 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:
Jodi and Jim:

Letters concerning the lynx SSA were sent by the New England Field Office to state directors and New Hampshire and Vermont Fish and Wildlife agencies yesterday. See email below. I will forward the VT letter for your records also. I see the NEFO copied all the individuals that you requested.

Mark

----- Forwarded message -----

From: **Dube, Jeannine** <jeannine_dube@fws.gov>
Date: Tue, Jul 14, 2015 at 3:42 PM
Subject: Letter Re Canada lynx species status assessment
To: glenn.d.normandeau@wildlife.nh.gov, Gary Frazer <gary_frazer@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Jodi Bush <jodi_bush@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, jmawdsley@fishwildlife.org, nick.wiley@myfwc.com

Please see attached. A hard copy will be mailed only to the addressee tomorrow.

Jeannine Dube

--

Secretary
New England Field Office
U.S. Fish and Wildlife Service
70 Commercial St., Suite 300
Concord, NH 03301
603-223-2541

"Life does not have to be perfect to be wonderful." Annette Funicello

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [Zelenak, Jim](#)
To: [McCollough, Mark](#)
Subject: Re: Maine lynx experts
Date: Wednesday, July 15, 2015 8:32:28 AM

P.S. Please feel free to begin reaching out to Dan, Erin, Jenn, and George Jacobson (potential presenter but not on lynx expert panel) regarding their potential availability in Oct./Nov.

On Wed, Jul 15, 2015 at 8:22 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:
Jim: I would consider Harrison, Simons-Legaard, and Vashon all a "1" for invitation to the expert elicitation meeting. All bring different knowledge and expertise to our process. Given the importance of Maine to the DPS (possibly the largest population at present), I would prefer to have all present.

Dan Harrison: Has been principle advisor for ~9 graduate students working on hare and forest management, lynx history, lynx spatial and habitat/occupancy models. He and his students have published extensively. He is considered one of the top hare, lynx and habitat modeling experts in North America. He is now chair of the Dept. of Wildlife, Fisheries, and Conservation Biology at UMaine. See <http://umaine.edu/wle/faculty-staff-directory/daniel-j-harrison/>

Erin Simons-Legaard: Recent (2009) doctoral student, now an assistant research professor in forest landscape modeling. Erin and her husband Casey have developed a forest change model landscape model to do retrospective, current, and future forecasts of forest conditions in northern Maine. She and her husband have been forecasting effects of spruce budworm and climate change on Maine's forest. She will use this model as basis to expand her lynx habitat model, which enables forecasting future conditions for lynx in Maine considering anticipated changes from climate change effects on Maine's forest composition, current trends in Maine forestry, and spruce budworm.
See <http://forest.umaine.edu/people/directory/erin-simons-legaard/>

Jen Vashon: Led a 10-year study of lynx in Maine, published 2 manuscripts in JWM in 2008, and coauthored other manuscripts with Dan Harrison's students and John Organ (on denning). Jen authored a Canada lynx assessment for the State in 2012, which summarizes published and unpublished data from the 10-year study and summarizes our current knowledge of lynx in Maine.

UMaine has a Climate Change Institute. See <http://climatechange.umaine.edu/> George Jacobson http://climatechange.umaine.edu/people/profile/george_jacobson is professor emeriti and Maine's Climatologist. He probably has the greatest overall knowledge of climate change projections in Maine and the Northeast. His specialty is paleoecology of climate effects on forest composition in the eastern U. S. Much has been done in recent years to step down IPCC forecasts to Maine and the Northeast. Even if Dr. Jacobson was not part of our expert panel, we could probably seek the assistance of the Climate Change Institute to provide information on the key issues we are concerned - future precipitation, snow depth and characteristics, length of winter, etc. to bring to the expert meeting.

Canadian representation: I think it is critical for recovery/listing that we know as much as possible about the status, threats, and future of lynx in populations immediately adjacent in Canada. Its unfortunate that we do not have regular contact with our Canadian counterparts. Its probably not feasible to have Serge Lariviere or Cade Libby travel from

Quebec and New Brunswick, respectively to present. I wonder if someone like Dennis Murray, a Canadian who would be extremely valuable to have present from an academic standpoint, could make some contacts and represent all of Canada? Conversely, if we knew key information needs, we could begin to make inquiries to biologists across the border to gather information to bring to the meeting.

Several reviews of the status of lynx in Canada shortly after listing were very helpful, e.g. Poole in 2003 <http://journals.sfu.ca/cfn/index.php/cfn/article/viewFile/738/738> and Justina Ray in 2002, Wildlife Conservation Society of Canada <http://carnivorecology.free.fr/pdf/WCSlynx.pdf> but to my knowledge, there are no recent compilations of lynx status in Canada?

Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Holt, Bryon](#)
To: [Zelenak, Jim](#)
Subject: Re: WA State lynx expert
Date: Wednesday, July 15, 2015 9:28:35 AM

Nope, feel free to send to whom ever you think should see it.

On Wed, Jul 15, 2015 at 9:24 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hey Bryon - would you mind if I shared your message below with the rest of the lynx SSA team (Core Team plus Mary and Heather)?

On Tue, Jul 14, 2015 at 12:15 PM, Holt, Bryon <bryon_holt@fws.gov> wrote:

Hi Jim,

Even though we have discussed this already, I am sending this as a follow-up for the record. I would consider that, of the list you provided, Gary Koehler would qualify as a lynx expert. Gary is the only one on the list that has actually done research on lynx in WA. He has done research on lynx in WA off and on for the past 30 to 40 years. The other listed individuals have not done research on lynx that I am aware of, except for Scott Fisher. But, Scott essentially assisted with trapping of lynx on DNR lands in WA (building traps, setting them out, running trap lines, etc.). One other person who I would recommend because of his strong ecological background coupled with his knowledge of lynx biology and ecology as well as boreal forest ecology is Keith Aubry. In my opinion, both Gary and Keith would contribute substantively to the meeting.

Also, Clayton Apps has done some work on lynx in southeastern BC, and southwestern Alberta, Canada if you are looking for a Canadian perspective on the status of lynx. I don't know if he is still active in the lynx world or not, but I could inquire. Let me know.

Bryon

On Thu, Jul 9, 2015 at 7:36 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi Bryon,

Not sure if this is what you intended to track down with Jeff when arranging a call with him during the lynx SSA call the other day, but I'd like to get all of your takes (as soon as possible) on the 1 or 2 folks most knowledgeable about past, current, and likely future distribution and health of the lynx pop(s) in WA, habitat condition, threats, potential climate-related impacts, fire, insects, etc.

Some of the names that have come up in discussions with others are:

Agency:

Gary Koehler (retired WDFW)

Scott Fitkin (WDFW)

Scott Fisher (WDNR)

Jeff Lewis (WDFW)

Research scientists:
Dan Thorton (WSU)
Aaron Wirsing (WSU)

Let me know who among these - or others - would be the best (and most likely able to attend) person to invite to the lynx SSA expert elicitation meeting we're are trying to arrange for Sept. - Oct. Also who you would select 2nd if your first choice was unable to attend. Keep in mind that we really want science/lynx mgmt. experts who can be objective and unbiased (i.e., not wearing their agency hats or pushing agency agenda with regard to listing and recovery decisions, etc.).

We hope to have some talking points out soon to clarify the last part above.

We need this pretty quickly because we need to begin reaching out soon to candidates for the meeting

Thanks,

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

From: [Zelenak, Jim](#)
To: [Tamara Smith](#); [Bryon Holt](#); [Kurt Broderdorp](#)
Cc: [Mary Parkin](#); [Heather Bell](#); [David Smith](#)
Subject: Fwd: Maine lynx experts
Date: Wednesday, July 15, 2015 10:29:04 AM

Hi Core and FIT Teams,

Thought others would like to see Mark's responses (and perhaps links) below.

Jim

----- Forwarded message -----

From: **McCullough, Mark** <mark_mccollough@fws.gov>
Date: Wed, Jul 15, 2015 at 8:42 AM
Subject: Re: Maine lynx experts
To: "Zelenak, Jim" <jim_zelenak@fws.gov>

Please share...it would be helpful if we could discuss as a group how to resolve the expert Canadian biologist concern. After we identify key objectives for the expert meeting and info needs, one thought is to develop a questionnaire to send to our counterparts in adjacent Canada. I did this for the 5-year review for the eastern Cougar and received good feedback. We would want to be very specific in our information request, though. Another thought is to have a webinar to invite Canadian biologists to join part of the expert meeting.

Justina Ray from Wildlife Conservation Society in Canada organized a meeting for Canada-US lynx researchers/managers in 2002 in Portland, Maine, just as I started for the Service. Canadian biologists traveled to Maine and gave reports on the status of lynx and lynx research in their respective jurisdictions, which are summarized in the report I sent. This was very helpful to us in Maine, but not much has been done since.

Part of the problem here is the language barrier in Quebec. I can somewhat read French and more recently have used Google Translate to translate some of the Quebec information on lynx and hares. I can't converse, though. My primary Quebec contact, Serge Lariviere furbearer biologist for Quebec, is much better at responding to my emails in English, but I sense English is difficult for him. Nevertheless, they are monitoring hare and lynx populations just north of us and undoubtedly have valuable information to share. Occasionally, UMaine grad students contact the Quebec biologists and obtain the most recent information.

I almost stayed on the phone yesterday to hear more about planning for the SSA meeting. I'm curious as I thought it was a very structured process, but yesterday's conversation led me to believe it is more open-ended. The experts we invite will want to be very focused, and we should take advantage of having such expertise gathered in one place. We really haven't gathered lynx experts as a group since Minnesota ~2008 when the BioTeam was more active.

Mark

On Wed, Jul 15, 2015 at 10:30 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Excellent! thanks Mark. Do you mind if I share this with the Core Team, Mary and Heather, and Dave from USGS?

On Wed, Jul 15, 2015 at 8:22 AM, McCollough, Mark <mark_mccollough@fws.gov> wrote:

Jim: I would consider Harrison, Simons-Legaard, and Vashon all a "1" for invitation to the expert elicitation meeting. All bring different knowledge and expertise to our process. Given the importance of Maine to the DPS (possibly the largest population at present), I would prefer to have all present.

Dan Harrison: Has been principle advisor for ~9 graduate students working on hare and forest management, lynx history, lynx spatial and habitat/occupancy models. He and his students have published extensively. He is considered one of the top hare, lynx and habitat modeling experts in North America. He is now chair of the Dept. of Wildlife, Fisheries, and Conservation Biology at UMaine. See <http://umaine.edu/wle/faculty-staff-directory/daniel-j-harrison/>

Erin Simons-Legaard: Recent (2009) doctoral student, now an assistant research professor in forest landscape modeling. Erin and her husband Casey have developed a forest change model landscape model to do retrospective, current, and future forecasts of forest conditions in northern Maine. She and her husband have been forecasting effects of spruce budworm and climate change on Maine's forest. She will use this model as basis to expand her lynx habitat model, which enables forecasting future conditions for lynx in Maine considering anticipated changes from climate change effects on Maine's forest composition, current trends in Maine forestry, and spruce budworm. See <http://forest.umaine.edu/people/directory/erin-simons-legaard/>

Jen Vashon: Led a 10-year study of lynx in Maine, published 2 manuscripts in JWM in 2008, and coauthored other manuscripts with Dan Harrison's students and John Organ (on denning). Jen authored a Canada lynx assessment for the State in 2012, which summarizes published and unpublished data from the 10-year study and summarizes our current knowledge of lynx in Maine.

UMaine has a Climate Change Institute. See <http://climatechange.umaine.edu/> George Jacobson http://climatechange.umaine.edu/people/profile/george_jacobson is professor emeriti and Maine's Climatologist. He probably has the greatest overall knowledge of climate change projections in Maine and the Northeast. His specialty is paleoecology of climate effects on forest composition in the eastern U. S. Much has been done in recent years to step down IPCC forecasts to Maine and the Northeast. Even if Dr. Jacobson was not part of our expert panel, we could probably seek the assistance of the Climate Change Institute to provide information on the key issues we are concerned - future precipitation, snow depth and characteristics, length of winter, etc. to bring to the expert meeting.

Canadian representation: I think it is critical for recovery/listing that we know as much as possible about the status, threats, and future of lynx in populations immediately adjacent in Canada. Its unfortunate that we do not have regular contact with our Canadian counterparts. Its probably not feasible to have Serge Lariviere or Cade Libby travel from Quebec and New Brunswick, respectively to present. I wonder if someone like Dennis Murray, a Canadian who would be extremely valuable to have present from an academic standpoint, could make some contacts and represent all of Canada? Conversely, if we knew key information needs, we could begin to make inquiries to biologists across the border to gather information to bring to the meeting.

Several reviews of the status of lynx in Canada shortly after listing were very helpful, e.g. Poole in 2003 <http://journals.sfu.ca/cfn/index.php/cfn/article/viewFile/738/738> and Justina Ray in 2002, Wildlife Conservation Society of Canada <http://carnivorecology.free.fr/pdf/WCSlynx.pdf> but to my knowledge, there are no recent compilations of lynx status in Canada?

Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601

(406) 449-5225 ext. 220

jim_zelenak@fws.gov

From: [McCullough, Mark](#)
To: [Zelenak, Jim](#)
Subject: Re: Maine lynx experts
Date: Wednesday, July 15, 2015 10:42:55 AM

Please share...it would be helpful if we could discuss as a group how to resolve the expert Canadian biologist concern. After we identify key objectives for the expert meeting and info needs, one thought is to develop a questionnaire to send to our counterparts in adjacent Canada. I did this for the 5-year review for the eastern Cougar and received good feedback. We would want to be very specific in our information request, though. Another thought is to have a webinar to invite Canadian biologists to join part of the expert meeting.

Justina Ray from Wildlife Conservation Society in Canada organized a meeting for Canada-US lynx researchers/managers in 2002 in Portland, Maine, just as I started for the Service. Canadian biologists traveled to Maine and gave reports on the status of lynx and lynx research in their respective jurisdictions, which are summarized in the report I sent. This was very helpful to us in Maine, but not much has been done since.

Part of the problem here is the language barrier in Quebec. I can somewhat read French and more recently have used Google Translate to translate some of the Quebec information on lynx and hares. I can't converse, though. My primary Quebec contact, Serge Lariviere furbearer biologist for Quebec, is much better at responding to my emails in English, but I sense English is difficult for him. Nevertheless, they are monitoring hare and lynx populations just north of us and undoubtedly have valuable information to share. Occasionally, UMaine grad students contact the Quebec biologists and obtain the most recent information.

I almost stayed on the phone yesterday to hear more about planning for the SSA meeting. I'm curious as I thought it was a very structured process, but yesterday's conversation led me to believe it is more open-ended. The experts we invite will want to be very focused, and we should take advantage of having such expertise gathered in one place. We really haven't gathered lynx experts as a group since Minnesota ~2008 when the BioTeam was more active.

Mark

On Wed, Jul 15, 2015 at 10:30 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Excellent! thanks Mark. Do you mind if I share this with the Core Team, Mary and Heather, and Dave from USGS?

On Wed, Jul 15, 2015 at 8:22 AM, McCullough, Mark <mark_mccollough@fws.gov> wrote:

Jim: I would consider Harrison, Simons-Legaard, and Vashon all a "1" for invitation to the expert elicitation meeting. All bring different knowledge and expertise to our process. Given the importance of Maine to the DPS (possibly the largest population at present), I would prefer to have all present.

Dan Harrison: Has been principle advisor for ~9 graduate students working on hare and forest management, lynx history, lynx spatial and habitat/occupancy models. He and his students have published extensively. He is considered one of the top hare, lynx and habitat modeling experts in North America. He is now chair of the Dept. of Wildlife, Fisheries, and Conservation Biology at UMaine. See <http://umaine.edu/wle/faculty-staff-directory/daniel-j-harrison/>

Erin Simons-Legaard: Recent (2009) doctoral student, now an assistant research professor in forest landscape modeling. Erin and her husband Casey have developed a forest change model landscape model to do retrospective, current, and future forecasts of forest conditions in northern Maine. She and her husband have been forecasting effects of spruce budworm and climate change on Maine's forest. She will use this model as basis to expand her lynx habitat model, which enables forecasting future conditions for lynx in Maine considering anticipated changes from climate change effects on Maine's forest composition, current trends in Maine forestry, and spruce budworm.
See <http://forest.umaine.edu/people/directory/erin-simons-legaard/>

Jen Vashon: Led a 10-year study of lynx in Maine, published 2 manuscripts in JWM in 2008, and coauthored other manuscripts with Dan Harrison's students and John Organ (on denning). Jen authored a Canada lynx assessment for the State in 2012, which summarizes published and unpublished data from the 10-year study and summarizes our current knowledge of lynx in Maine.

UMaine has a Climate Change Institute. See <http://climatechange.umaine.edu/> George Jacobson http://climatechange.umaine.edu/people/profile/george_jacobson is professor emeriti and Maine's Climatologist. He probably has the greatest overall knowledge of climate change projections in Maine and the Northeast. His specialty is paleoecology of climate effects on forest composition in the eastern U. S. Much has been done in recent years to step down IPCC forecasts to Maine and the Northeast. Even if Dr. Jacobson was not part of our expert panel, we could probably seek the assistance of the Climate Change Institute to provide information on the key issues we are concerned - future precipitation, snow depth and characteristics, length of winter, etc. to bring to the expert meeting.

Canadian representation: I think it is critical for recovery/listing that we know as much as possible about the status, threats, and future of lynx in populations immediately adjacent in Canada. Its unfortunate that we do not have regular contact with our Canadian counterparts. Its probably not feasible to have Serge Lariviere or Cade Libby travel from Quebec and New Brunswick, respectively to present. I wonder if someone like Dennis Murray, a Canadian who would be extremely valuable to have present from an academic standpoint, could make some contacts and represent all of Canada? Conversely, if we knew key information needs, we could begin to make inquiries to biologists across the border to gather information to bring to the meeting.

Several reviews of the status of lynx in Canada shortly after listing were very helpful, e.g. Poole in 2003 <http://journals.sfu.ca/cfn/index.php/cfn/article/viewFile/738/738> and Justina Ray in 2002, Wildlife Conservation Society of Canada <http://carnivorecology.free.fr/pdf/WCSlynx.pdf> but to my knowledge, there are no recent compilations of lynx status in Canada?

Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2

Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

From: [Mark McCollough \(Google Docs\)](#)
To: bryon_holt@fws.gov
Subject: Cardinal SSA ques... - I wonder if 10-20 breeding females is...
Date: Wednesday, July 15, 2015 12:23:19 PM
Attachments: [logo.png](#)

Mark McCollough replied to a comment on [Cardinal SSA questions_ Lynx_4_28_15 draft.docx](#)



Mark McCollough

| 10-20

I wonder if 10-20 breeding females is too low and vulnerable to stochastic events. Would 30-50 reproductive females be needed for persistence? Some modeling may help inform. Expert opinion may be helpful on this issue.



Bryon Holt

I agree Mark, 10-20 seems to low to me, especially if the estimate is that MT and ME could support 100 lynx on the low end. But, perhaps the experts would have a better assessment of this.



Mark McCollough

Bryon: Several years ago at a BioTeam meeting we discussed that John Squires was completing a PVA for lynx. Do you know if that was ever completed or published? Mark

You received this email because you are mentioned in this thread. [Change what Google Docs sends you.](#) You can reply to this email to reply to the discussion.

Google

From: [Zelenak, Jim](#)
To: [Mark McCollough](#); [Tamara Smith](#); [Kurt Broderdorp](#)
Cc: [Mary Parkin](#); [Heather Bell](#); [Bryon Holt](#); [David Smith](#)
Subject: Fwd: WA State lynx expert
Date: Wednesday, July 15, 2015 12:32:48 PM

Likewise, see Bryon's recommendations below.

Jim

----- Forwarded message -----

From: **Holt, Bryon** <bryon_holt@fws.gov>
Date: Wed, Jul 15, 2015 at 10:28 AM
Subject: Re: WA State lynx expert
To: "Zelenak, Jim" <jim_zelenak@fws.gov>

Nope, feel free to send to whom ever you think should see it.

On Wed, Jul 15, 2015 at 9:24 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hey Bryon - would you mind if I shared your message below with the rest of the lynx SSA team (Core Team plus Mary and Heather)?

On Tue, Jul 14, 2015 at 12:15 PM, Holt, Bryon <bryon_holt@fws.gov> wrote:

Hi Jim,

Even though we have discussed this already, I am sending this as a follow-up for the record. I would consider that, of the list you provided, Gary Koehler would qualify as a lynx expert. Gary is the only one on the list that has actually done research on lynx in WA. He has done research on lynx in WA off and on for the past 30 to 40 years. The other listed individuals have not done research on lynx that I am aware of, except for Scott Fisher. But, Scott essentially assisted with trapping of lynx on DNR lands in WA (building traps, setting them out, running trap lines, etc.). One other person who I would recommend because of his strong ecological background coupled with his knowledge of lynx biology and ecology as well as boreal forest ecology is Keith Aubry. In my opinion, both Gary and Keith would contribute substantively to the meeting.

Also, Clayton Apps has done some work on lynx in southeastern BC, and southwestern Alberta, Canada if you are looking for a Canadian perspective on the status of lynx. I don't know if he is still active in the lynx world or not, but I could inquire. Let me know.

Bryon

On Thu, Jul 9, 2015 at 7:36 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Hi Bryon,

Not sure if this is what you intended to track down with Jeff when arranging a call with him during the lynx

SSA call the other day, but I'd like to get all of your takes (as soon as possible) on the 1 or 2 folks most knowledgeable about past, current, and likely future distribution and health of the lynx pop(s) in WA, habitat condition, threats, potential climate-related impacts, fire, insects, etc.

Some of the names that have come up in discussions with others are:

Agency:

Gary Koehler (retired WDFW)
Scott Fitkin (WDFW)
Scott Fisher (WDNR)
Jeff Lewis (WDFW)

Research scientists:

Dan Thorton (WSU)
Aaron Wirsing (WSU)

Let me know who among these - or others - would be the best (and most likely able to attend) person to invite to the lynx SSA expert elicitation meeting we're are trying to arrange for Sept. - Oct. Also who you would select 2nd if your first choice was unable to attend. Keep in mind that we really want science/lynx mgmt. experts who can be objective and unbiased (i.e., not wearing their agency hats or pushing agency agenda with regard to listing and recovery decisions, etc.).

We hope to have some talking points out soon to clarify the last part above.

We need this pretty quickly because we need to begin reaching out soon to candidates for the meeting

Thanks,

Jim

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Zelenak, Jim](#)
To: [Jackson, Scott -FS](#); [Squires, John -FS](#); [McKelvey, Kevin -FS](#); [Schwartz, Michael K -FS](#)
Cc: [Mark McCollough](#); [Bryon Holt](#); [Tamara Smith](#); [Kurt Broderdorp](#); [Kurt Johnson](#); [Mary Parkin](#); [Heather Bell](#); [David Smith](#)
Bcc: [Sartorius, Shawn S -FS](#)
Subject: New RMRS climate change - wildfire paper
Date: Wednesday, July 15, 2015 12:40:39 PM

In case you haven't seen it yet. Likely of relevance to lynx discussions.

<http://www.nature.com/ncomms/2015/150714/ncomms8537/pdf/ncomms8537.pdf>

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Smith, Tamara](#)
To: [Eckel, Katherine](#)
Subject: Re: Lynx SSA, MN
Date: Wednesday, July 15, 2015 1:09:15 PM

Thanks, Kathy!

On Wed, Jul 15, 2015 at 12:24 PM, Eckel, Katherine <katherine_eckel@fws.gov> wrote:

Please see attached.

Katherine Eckel
Administrative Support Assistant
U.S. Fish and Wildlife Service
4101 American Boulevard East
Bloomington, MN 55425

(612) 725-3548, ext. 2250

(612) 725-3609 (fax)

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East
Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

From: [Smith, Tamara](#)
To: [Zelenak, Jim](#)
Subject: Re: Updated State Coordination Letter
Date: Wednesday, July 15, 2015 2:18:58 PM

Okay thanks for the clarification!

On Wed, Jul 15, 2015 at 1:37 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

I believe that Jodi's intent is for Field Supervisors to email the letter to their State agency counterparts (and to cc me).

Thanks Tam.

Jim

On Wed, Jul 15, 2015 at 12:27 PM, Smith, Tamara <tamara_smith@fws.gov> wrote:

We just sent out paper copies to the addressee for each state, but I had another quick question - should these be emailed out by the Field Supervisor or are the biologists generally sending these out? Sorry for the confusion.

I'll send you copies too.

On Tue, Jul 14, 2015 at 3:13 PM, Smith, Tamara <tamara_smith@fws.gov> wrote:

Okay, Thanks! I think I'll do what Maine did - paper to addressee and email pdfs to everyone else.

On Tue, Jul 14, 2015 at 3:09 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Good question, Tam. I only saw the electronic .pdf of the one MTFO sent, but I just had a reply from folks in the New England FO that they sent out electronic letters to addressee and cc list and would send hard copy only to addressee. I guess whatever you normally do there.

Also - make sure Gary's name is corrected in the cc list from "Fraser" to "Frazer."

Thanks.

On Tue, Jul 14, 2015 at 2:03 PM, Smith, Tamara <tamara_smith@fws.gov> wrote:

Hi Jim - We are going to get these letters sent out today or tomorrow for WI and MN. One quick question - Are you sending paper copies and/or email?

On Tue, Jul 7, 2015 at 1:02 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Attached is a corrected version of the template letter for your use.

1. Also highlights top of page 2 where you need to delete "Montana" and put your state;
2. Corrects cc list from "Jonathon" to "Jonathan" Mawdsley
3. Also highlights need to change header from "Dear Director Hagener" to Dear Director (yours).

Let me know if you have questions. Thanks for getting these out.

Jim

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:
Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Jim Zelanak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelanak@fws.gov

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East
Bloomington, MN 55425

612-725-3548 ext. 2219
612-600-1599 cell

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East
Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East
Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East
Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

From: [Parkin, Mary](#)
To: [Zelenak, Jim](#)
Cc: [Heather Bell](#)
Subject: Re: SSA talking points
Date: Wednesday, July 15, 2015 3:14:41 PM

Hi Jim,

Yep, I think they've been vetted enough to distribute. Unless Heather objects, please let Jodi know they can go out!

Thanks,
Mary

p.s. I've been flat out today with another project, but I'll look at the "essential question" and selection criteria before day's end to see if I have anything to add.

On Wed, Jul 15, 2015 at 5:09 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Thanks Mary.

Heather - Jodi wants to know if you consider these "final" enough for her to send around to appropriate FWS managers and biologists who may soon get calls from the state agencies to which they recently sent the state coordination letter. Let me know.

Thanks,

Jim

On Tue, Jul 14, 2015 at 5:33 PM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi Jim,

I just sent this to Heather and Nathan, as they had requested it to post for the FIT. I've now incorporated comments from you, Heather, Nathan, Dave S, Jonathan, and Jennifer ... so it should be ok!

Can I assume that you distribute this to the core team and involved offices?

Let's plan on talking either later this week or on Monday's call about selection criteria for experts. I'll forward one of Dave's comments regarding this.

Cheers!
Mary

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

From: [McCollough, Mark](#)
To: [Reply](#)
Subject: Re: Cardinal SSA ques... - I wonder if 10-20 breeding females is...
Date: Wednesday, July 15, 2015 3:17:34 PM
Attachments: [logo.png](#)

Bryon: Several years ago at a BioTeam meeting we discussed that John Squires was completing a PVA for lynx. Do you know if that was ever completed or published? Mark

On Wed, Jul 15, 2015 at 1:39 PM, Bryon Holt (Google Docs) <d+MTE3NTg4NDMyMTI3MDI1NDU0OTc4-MTA3NDMyNzQwNzYwNzkzOTc1NDIz@docs.google.com> wrote:

Bryon Holt replied to a comment on [Cardinal SSA questions_ Lynx_4_28_15 draft.docx](#)



Mark McCollough

| 10-20

I wonder if 10-20 breeding females is too low and vulnerable to stochastic events. Would 30-50 reproductive females be needed for persistence? Some modeling may help inform. Expert opinion may be helpful on this issue.



Bryon Holt

I agree Mark, 10-20 seems to low to me, especially if the estimate is that MT and ME could support 100 lynx on the low end. But, perhaps the experts would have a better assessment of this.

You received this email because you are mentioned in this thread. [Change what Google Docs sends you.](#) You can reply to this email to reply to the discussion.

Google

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709

mark_mccollough@fws.gov

From: [Holt, Bryon](#)
To: [Zelenak, Jim](#)
Cc: [Mary Parkin](#)
Subject: Re: Lynx SSA
Date: Wednesday, July 15, 2015 4:08:40 PM

Yes, monthly internal FWS coordination call is fine.

On Wed, Jul 15, 2015 at 1:03 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

I assume you mean the monthly internal FWS coordination calls (not the weekly SSA implementation calls or the bi-weekly Core Team calls, yes?).

Mary - if Bryon replies (all) affirmatively, could you please add Kim to the monthly call invitee list?

On Wed, Jul 15, 2015 at 1:50 PM, Holt, Bryon <bryon_holt@fws.gov> wrote:

Jim,

Could you add Kim Garner (Chief of Classification and Recovery for Idaho) to the Lynx SSA calls. She would like to listen in as she has time.

Bryon

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

From: [Smith, David](#)
To: [Zelenak, Jim](#)
Subject: Re: draft guidance on organizing an EE workshop for SSA
Date: Wednesday, July 15, 2015 4:38:13 PM

Jim,

I'd like to get Heather's and Mary's comments on this before sharing, but after that sure - that is the intent.

Cheers,
Dave

David R. Smith
USGS - Leetown Science Center
11649 Leetown Road
Kearneysville, WV 25430
drsmith@usgs.gov
304-724-4467
<https://profile.usgs.gov/drsmith>
[ResearchGate profile](#)

On Wed, Jul 15, 2015 at 4:49 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Thanks Dave. Would you mind if I share this with the Core Team (Service lynx biologists only)?

On Wed, Jul 15, 2015 at 2:24 PM, Smith, David <drsmith@usgs.gov> wrote:

Here are draft guidelines (including some generic criteria for selecting experts and a workshop agenda template)

The source for much of this is documentation we put together for a GRSG workshop. I revised the guidance to be generic.

Pls comment and make suggestions. Seems like something along these lines will be helpful for the lynx workshop and other future workshops.

Dave

David R. Smith
USGS - Leetown Science Center
11649 Leetown Road
Kearneysville, WV 25430
drsmith@usgs.gov
304-724-4467
<https://profile.usgs.gov/drsmith>
[ResearchGate profile](#)

--

Jim Zelenak, Biologist

U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Bell, Heather](#)
To: [Zelenak, Jim](#)
Cc: [Parkin, Mary](#)
Subject: Re: SSA talking points
Date: Thursday, July 16, 2015 7:15:17 AM

YEs!

Heather Bell
Ecological Services HQ
Branch of Conservation Integration
SSA Framework Team Lead
Remotely Located at
134 S. Union Blvd
Lakewood, CO 80228
303-236-4514

Check it out! SSA Framework - Google Site for Staff
at <https://sites.google.com/a/fws.gov/ssa/> and the REV Google Site: <https://sites.google.com/a/fws.gov/rev/>

On Wed, Jul 15, 2015 at 3:09 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Thanks Mary.

Heather - Jodi wants to know if you consider these "final" enough for her to send around to appropriate FWS managers and biologists who may soon get calls from the state agencies to which they recently sent the state coordination letter. Let me know.

Thanks,

Jim

On Tue, Jul 14, 2015 at 5:33 PM, Parkin, Mary <mary_parkin@fws.gov> wrote:

Hi Jim,

I just sent this to Heather and Nathan, as they had requested it to post for the FIT. I've now incorporated comments from you, Heather, Nathan, Dave S, Jonathan, and Jennifer ... so it should be ok!

Can I assume that you distribute this to the core team and involved offices?

Let's plan on talking either later this week or on Monday's call about selection criteria for experts. I'll forward one of Dave's comments regarding this.

Cheers!

Mary

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:

Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

**COMMUNICATING A CONSISTENT MESSAGE TO
STATES AND OTHER PARTNERS
ABOUT THEIR ROLES IN THE SSA PROCESS**

U.S. Fish and Wildlife Service
July 2015

The U.S. Fish and Wildlife Service has adopted an integrated and conservation-focused analytical approach, the Species Status Assessment (SSA) Framework, to assess a species' biological status for the purpose of informing decisions and activities under the Endangered Species Act. When applying the SSA Framework, the Service will collaborate fully and appropriately with our State partners, as well as Tribes and other governmental and nongovernmental partners, to ensure that we are using the best available information and valid analytical methods.

We emphasize that SSAs are strictly science-based. They provide the scientific foundation for subsequent ESA decisions (which also incorporate policy considerations) such as listing determinations and recovery recommendations. Given the focus on science, with each SSA we are aiming for a *structured* collaboration that centers on working with species experts and other scientific experts to produce rigorous analyses using consistent and transparent procedures.

**U.S. Fish and Wildlife Service:
Talking Points for All SSAs**

July 2015

(FOR INTERNAL USE – NOT FOR FURTHER DISTRIBUTION)

The following talking points have been prepared to convey a clear and consistent message to our conservation partners regarding their prospective involvement in status assessments using the SSA Framework.

- The SSA process is focused exclusively on a scientific analysis of a given species' viability using empirical data, expert opinion, and forecasting (using conceptual and/or mathematical models) that incorporates best available biological and threats-based information.
- SSA results will inform ESA decisions, but decision making with regard to threatened or endangered species is not a component of the SSA Framework.
- Our objectives with respect to expert involvement in the SSA process are to:
 1. Solicit knowledge (information and judgment) from the most qualified experts with regard to the species' current and future status;
 2. Represent the diversity of expert judgment within the scientific community;
 3. Facilitate open discussion and independent input in a cooperative manner;
 4. Ensure timeliness and efficiency in conducting the assessment; and
 5. Safeguard the objectivity, neutrality, and scientific rigor of the assessment.
- Given these objectives:
 1. We will seek the participation of scientists who can provide the best available information on those aspects of species' biology, ecology, and/or environmental conditions that are likely to influence viability at the population and species levels.
 2. At certain points in the assessment, we may need the input of those experts who are most qualified to characterize the effects of various threats or stressors on the species and its habitat over given future time frames and in given portions of the range (i.e., help with cause-effect analyses).

3. If needed to assess past management efforts and the species' response to those efforts, we may engage professionals with on-the-ground management experience.
 4. Consistent with best practices for expert elicitation, we will limit the number of participants (both experts and observers) in order to meet deadlines, avoid redundancy, and foster open, technical discussions among all participants.
 5. Participation may take a variety of forms, including group meetings, individual meetings, conference calls, one-on-one discussions, or written correspondence.
 6. The SSA will be conducted transparently, with both expert input and assessment results being made available for informational purposes and, as appropriate, agency and peer review. We should note that the name and affiliation of participating experts will be on record, although individual input may be kept anonymous to facilitate candid responses.
 7. We will seek individual input knowledge on specific topics but will not seek or obtain any group consensus from the participants.
 8. Based on expertise and need, the role of each expert and the input solicited from each individual may vary at different times during the SSA process.
- We intend to structure involvement in each SSA to achieve the most scientifically rigorous analysis possible in the time available. This requires active support from both the Service and our partners. In general, SSAs will involve:
 1. Participants from the Service who are experts on the species and other relevant subjects;
 2. Service and/or USGS facilitators who are trained in the SSA process and expert elicitation; and
 3. Invited participants from outside the Service who are experts on the species and other relevant subjects.
 - We invite States and other partners to suggest individuals who may have relevant expertise. Selection of experts will be transparent and geared toward engaging a diversity of qualified expert judgment. Selection criteria will relate to scientific qualifications, familiarity with relevant subject matter, and diversity of scientific expertise.
 - Along with direct input from experts, the Service will coordinate closely with States and other partners during the SSA process. The form of this coordination will be determined on a case-by-case basis.
 - We look forward to working with the States and other partners during the SSA process and as SSA results are applied to future ESA decisions.

Specific Talking Points for the Canada Lynx SSA

July 2015

(FOR INTERNAL USE – NOT FOR FURTHER DISTRIBUTION)

In addition to the general talking points provided above, the following points apply specifically to the Canada lynx SSA:

- The lynx SSA is time-sensitive in that it must be completed as a precursor to making decisions about the appropriate listing classification of the DPS and, if called for, completing a recovery plan by the court-ordered deadline of January 2018. We are therefore endeavoring to complete the SSA this calendar year.
- To achieve the most rigorous analysis possible in the time available, we have structured involvement in the lynx SSA as follows:
 1. A core team of Service biologists representing the geographic areas occupied by the lynx DPS will provide information and expertise for the assessment, identify experts, and act as liaisons with their respective States and other partners;
 2. An SSA facilitation team that is highly conversant in the SSA process will ensure that the assessment conforms to the SSA framework and that project time frames are met; and
 3. Invited experts, both within and outside the Service, will provide information and/or expert opinion at various points of the process, depending on need.
- As core team members identify and select experts using explicit selection criteria, we will be receptive to suggestions regarding individuals who may have strong expertise in the scientific questions surrounding lynx conservation. We reiterate, however, that we reserve the right to make final selections for expert involvement in the assessment.
- Along with direct expert input, the lynx SSA will include close coordination among the Service, States, and other partners. With regard to all involved States, we have scheduled monthly conference calls and/or webinars to provide updates and answer questions. The first monthly call with States has been scheduled for July 29th, and subsequent calls will be held on the last Wednesday of each month until the SSA report is completed and distributed for agency and peer review.

From: Bush, Jodi
To: [Drue DeBerry](#); [Michael Carrier](#); [Laury Zicari](#); [Scott Hicks](#); [Peter Fasbender](#); [Tom Chapman](#); [Wally Murphy](#); [David Stilwell](#); [Paul Henson](#); [Larry Crist](#); [Eric Rickerson](#); [Mark Sattelberg](#)
Cc: [Tyler Abbott](#); [Lisa Solberg Schwab](#); [Lisa Mandell](#); [Jeff Krupka](#); [Karl Halupka](#); [Michelle Eames](#); [Anthony Tur](#); [Mark Maghini](#); [Kate Novak](#); [Rollie White](#); [Gary Miller](#); [Jeffrey Dillon](#); [Grant Canterbury](#); [Sarah Hall](#); [Eric Hein](#); [Brady McGee](#); [Paul Casey](#); [Jim Zelanak](#); [Jessica Hogrefe](#); [Laura Ragan](#); [Ann Belleman](#); [Tamara Smith](#); [Chris Mensing](#); [Mark McCollough](#); [Mary Parkin](#); [Martin Miller](#); [Steve Duke](#); [Kim Garner](#); [Bryon Holt](#); [Megan Kosterman](#); [Seth Willey](#); [Leslie Ellwood](#); [Kurt Broderdorp](#); [Ann Timberman](#)
Subject: FOR YOUR INFORMATION ONLY: SSA and State Coordination Letter
Date: Thursday, July 16, 2015 8:38:16 AM
Attachments: [2015.07.14 Talking points for State involvement in SSAs_with lynx.docx](#)

The attached is an **internal only talking points** document on SSAs. We share it with you to help with conversations you may be having or will have with our state counterparts. Feel free to give Jim Zelanak or I a call if you have additional questions or concerns thanks. JB

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Oregon Fish and Wildlife Office

2600 SE 98th Avenue, Suite 100

Portland, Oregon 97266

Phone: (503) 231-6179 FAX: (503) 231-6195

Reply To: 8182.03510

File Name: 20150714_Lynx_SSA_letter_Oregon

TS Number: 15-692

JUL 16 2015

Mr. Curt Melcher, Director
Oregon Department of Fish and Wildlife
4034 Fairview Industrial Drive SE
Salem, OR 97302

Dear Mr. Melcher:

As you know, the U.S. Fish and Wildlife Service (Service) is conducting a status assessment for the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*). The lynx DPS was listed as threatened under the Endangered Species Act (Act) in 2000 (*Federal Register*, 65:16502; March 24, 2000). We published a Recovery Outline for the DPS in 2005, and we revised the critical habitat designation for the DPS in 2014 (*Federal Register*, 79:54782; September 12, 2014).

Although we intended to complete a five-year status review of the lynx DPS by this month, the Service determined that we would first implement a relatively new framework, a Species Status Assessment (SSA; see enclosed fact sheet). The SSA is a structured, transparent, and scientifically-robust status, threat, and viability assessment that is intended to provide the scientific underpinnings for all determinations the Service is required to make in accordance with the Act (e.g., listing decisions, status reviews, critical habitat designations, and recovery plans). By providing all the species-specific science in a single document that can be updated as new information becomes available, the SSA report is intended to streamline, expedite, and reduce the size and complexity of *Federal Register* notices associated with determinations required by the Act.

Over the next several months, we will be coordinating with States and other partners and seeking input from objective, independent experts in lynx ecology, habitat, management, and climate modeling to assess the current status and likely future viability of lynx populations within the DPS. We are scheduling monthly calls with your agency and the wildlife management agencies from other states within the range of the DPS to provide updates on SSA progress and to seek input at appropriate times during the process regarding the biological status of, and potential threats to, lynx populations within the DPS. Those calls are scheduled for the last Wednesday of every month (starting July 29) at 1pm, MTN time. Call-in information is 866.822.7385, passcode: 5396168.

To ensure that our assessment will be as accurate and complete as possible, we will use the best scientific and commercial data available in the development of the SSA report. We hope to

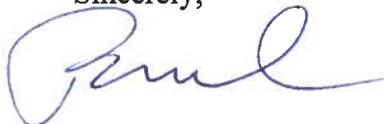
complete the SSA report by December 2015, and then begin the recovery planning process so that we can meet the court-ordered January 15, 2018, deadline to complete a recovery plan for the lynx DPS.

We continue to welcome any scientific information (e.g., survey results, habitat assessments, modeling efforts, implementation and/or monitoring of conservation measures, verified observations) you wish to provide for our consideration regarding the status, distribution, and likely future condition of lynx and snowshoe hare (*Lepus americanus*) populations and habitats in Oregon. Please be aware that all data and information submitted to us, including names and addresses, will become part of the record for this status assessment and may be made public. Information should be submitted to:

U.S. Fish and Wildlife Service
Montana Ecological Services Field Office
Attn: Jim Zelenak
585 Shepard Way, Suite 1
Helena, MT 59601

Thank you for your continued interest in Canada lynx conservation. We look forward to continued collaboration with your agency throughout this process. If you would like additional information or have questions about the lynx DPS or the SSA framework, please contact Sue Livingston of this office, at 503-231-6179, sue_livingston@fws.gov.

Sincerely,



Paul Henson
State Supervisor

Enclosure

cc:

Nick Wiley, Chair, Threatened and Endangered Species Policy Committee, AFWA (email)
Jonathan Mawdsley, Fish and Wildlife Science Coordinator, AFWA (email)
Gary Frazer, HQ (email)
Gary Miller, La Grande Field Office (email)
Bryon Holt, Northern Idaho Field Office (email)
Jim Zelenak, Montana Ecological Services Office (email)



U.S. Fish & Wildlife Service

The Species Status Assessment Framework

An Integrated Framework for Conservation

“The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday’s logic.”

– Peter Drucker

Although significant progress has been made in safeguarding species and their habitats, limited resources and an ever-increasing workload jeopardize our long-term effectiveness at fulfilling our responsibilities. In addition, novel and significant conservation challenges lie ahead, including a changing climate. While we continue to build on our successes, ensuring successful conservation and recovery of the nation’s species requires an increasing commitment to new ways of thinking, working, and sharing. From a budgetary and conservation standpoint, we simply cannot afford business as usual. The Species Status Assessment (SSA) Framework, in concert with other transformative efforts, better allows us to meet the complex challenges ahead and guide our efforts to continually enhance our conservation success.

The SSA Framework

The SSA Framework is an analytical framework for assessing a species’ biological condition and level of viability. Building on the best of our current analytical processes and the latest in conservation biology, this framework integrates analyses that are common to all ESA functions, eliminates duplicative and costly processes, and allows us to strategically focus on our core mission of preventing extinction and achieving recovery. In addition, the SSA Framework provides a structure for effectively engaging with our State partners and soliciting peer review.

Our Vision

Our vision is a common, consistent, repeatable, scientifically sound approach that will serve as the basis for future ESA decisions. Using the SSA Framework early provides the context for a decision on whether protections are warranted, then for decisions regarding what is needed for its conservation and recovery, what the greatest research needs are, and how public or private actions may affect the species. Staff in each region are available to provide support and training to help ensure we continue to build on the successes the SSA Framework has already delivered.

“The Species Status Assessment offers a unique opportunity to transform how the U.S. Fish and Wildlife Service delivers conservation.”

– Gary Frazer, Assistant Director
Ecological Services Program

Realized Benefits

By having the biological analyses in the SSA report, and referencing it in the proposed listing rule, we saved an estimated 65 pages of Federal Register printing – a \$30,000 cost saving – for the New Mexico meadow jumping mouse proposed rule alone.

Efficiency – structured and repeatable biological analysis saves time

Defensibility – analysis grounded in accepted science and a logical process with explicit assumptions and complete reasoning will inform our statutory decisions

Consistency – consistent framework and terminology will be used across all ESA functions and across regions and field offices

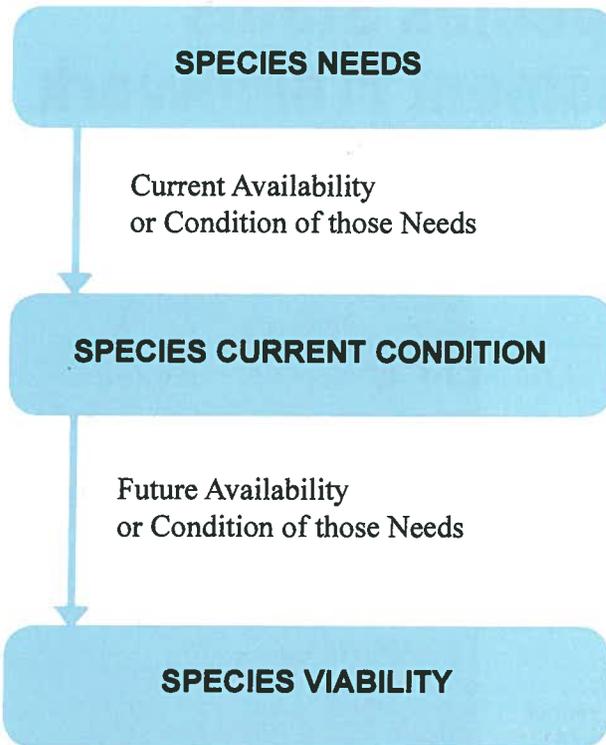
Effectiveness – clearly articulated reasoned decisions will foster effective communication and make for better conservation

Collaboration – a better forum for being inclusive; partners, particularly States, are more likely to understand and support



New Mexico meadow jumping mouse.
Credit: USFWS

Species Status Assessment Framework



Assessing the species level of viability is achieved by completing the above assessment framework. Credit: USFWS



Gunnison's prairie dog. Credit: USFWS

Applying SSA

We begin an SSA with an understanding of the species' unique life history, and from that evaluate a species' needs or biological requirements at the scales of individuals, populations, and species. We then consider the current and future availability or condition of those needs and investigate the reasons those needs are missing. The consequences of any missing needs are assessed to describe the current condition of the species, and project the future species condition over time. Using the principles of resilience, representation, and redundancy, the species' level of viability and risks to its viability are evaluated and characterized. Generally, the more redundant, representative, and resilient a species is, the more likely it is to persist over time, even under changing environmental conditions. The characterization of viability is enhanced by estimates at multiple time intervals under a range of probable scenarios to describe the possible changes in viability over time and to characterize the uncertainty.

Where to Learn More

Visit <https://sites.google.com/a/fws.gov/ssa/> to see examples of SSA reports, connect with others who have applied the Framework, get answers to frequently asked questions, find contact information for your Region's SSA Framework Implementation Team member, and access the guidance on applying the draft SSA Framework.

"The SSA is an intuitive framework that, once completed, allowed me to more clearly and quickly develop, explain, and write my listing argument."

- Craig Hansen, Species Lead for Gunnison's prairie dog

**U. S. Fish and Wildlife Service
Endangered Species Program
4401 N. Fairfax Drive, Room 420
Arlington, VA 22203
703-358-2171**

March 2014

From: [Sue Livingston](#)
To: jmawdsley@fishwildlife.org; Nick.Wiley@myfwc.com; [Gary Frazer](#); [Gary Miller](#); [Bryon Holt](#); [Jim Zelenak](#)
Subject: Lynx SSA letter sent to Oregon Department of Fish and Wildlife
Date: Thursday, July 16, 2015 10:46:58 AM
Attachments: [8182.03510 15-692_TS15-692.pdf](#)

Hello,

Please find attached the letter that was sent to Director Melcher of the Oregon Department of Fish and Wildlife inviting their participation in the lynx SSA process.

Regards,

Sue

~~~~~

Sue Livingston  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service  
Oregon Fish and Wildlife Office  
2600 SE 98th Ave., Suite 100  
Portland, OR 97266  
503-231-6179  
FAX 503-231-6195  
<http://www.fws.gov/oregonfwo/>

**From:** [Bush, Jodi](#)  
**To:** [Sue Livingston](#)  
**Subject:** Re: FW: FOR YOUR INFORMATION ONLY: SSA and State Coordination Letter  
**Date:** Thursday, July 16, 2015 11:38:12 AM

---

hey Sue. Doing great here. Will add you to the long list! JB

Jodi L. Bush  
Field Supervisor  
Montana Ecological Services Office  
585 Shepard Way, Suite 1  
Helena, MT 59601  
(406) 449-5225, ext.205

On Thu, Jul 16, 2015 at 9:17 AM, Sue Livingston <[sue\\_livingston@fws.gov](mailto:sue_livingston@fws.gov)> wrote:

Hey Jodi,

How is life in Big Sky Country? Hope you are enjoying the job and the locale.

I have recently become the OFWO lynx POC (yet another species to bone up on). Would you please add me to your lynx mailing list?

Thanks! Take care.

Sue

**From:** Dillon, Jeffrey [mailto:[jeffrey\\_dillon@fws.gov](mailto:jeffrey_dillon@fws.gov)]  
**Sent:** Thursday, July 16, 2015 8:07 AM  
**To:** Sue Livingston  
**Subject:** Fwd: FOR YOUR INFORMATION ONLY: SSA and State Coordination Letter

Probably want to get your name added to the mailing list.

Jeff

~~~~~  
Jeffrey A. Dillon, Endangered Species Division Manager

US Fish and Wildlife Service Phone: 503.231.6179

Oregon Fish and Wildlife Office Fax: 503.231.6195

2600 SE 98th Avenue, Suite 100

Email: Jeffrey_Dillon@fws.gov

Portland, Oregon 97266

<http://www.fws.gov/oregonfwo>

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Thu, Jul 16, 2015 at 7:37 AM

Subject: FOR YOUR INFORMATION ONLY: SSA and State Coordination Letter

To: Drue DeBerry <drue_deberry@fws.gov>, Michael Carrier <michael_carrier@fws.gov>,

Laury Zicari <laury_zicari@fws.gov>, Scott Hicks <scott_hicks@fws.gov>, Peter

Fasbender <peter_fasbender@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally

Murphy <wally_murphy@fws.gov>, David Stilwell <david_stilwell@fws.gov>, Paul

Henson <paul_henson@fws.gov>, Larry Crist <Larry_Crist@fws.gov>, Eric Rickerson

<eric_rickerson@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>

Cc: Tyler Abbott <tyler_abbott@fws.gov>, Lisa Solberg Schwab

<lisa_solbergschwab@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>, Jeff Krupka

<Jeff_Krupka@fws.gov>, Karl Halupka <Karl_Halupka@fws.gov>, Michelle Eames

<Michelle_Eames@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Mark Maghini

<mark_maghini@fws.gov>, Kate Novak <kate_novak@fws.gov>, Rollie White

<rollie_white@fws.gov>, Gary Miller <gary_miller@fws.gov>, Jeffrey Dillon

<jeffrey_dillon@fws.gov>, Grant Canterbury <grant_canterbury@fws.gov>, Sarah Hall

<Sarah_Hall@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Brady McGee

<Brady_McGee@fws.gov>, Paul Casey <paul_casey@fws.gov>, Jim Zelenak

<jim_zelenak@fws.gov>, Jessica Hogrefe <jessica_hogrefe@fws.gov>, Laura Ragan

<Laura_Ragan@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Tamara Smith

<Tamara_Smith@fws.gov>, Chris Mensing <chris_mensing@fws.gov>, Mark McCollough

<Mark_McCollough@fws.gov>, Mary Parkin <mary_parkin@fws.gov>, Martin Miller

<martin_miller@fws.gov>, Steve Duke <steve_duke@fws.gov>, Kim Garner

<kim_garner@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Megan Kosterman

<megan_kosterman@fws.gov>, Seth Willey <seth_willey@fws.gov>, Leslie Ellwood

<Leslie_Ellwood@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Ann

Timberman <ann_timberman@fws.gov>

The attached is an **internal only talking points** document on SSAs. We share it with you to help with conversations you may be having or will have with our state counterparts. Feel free to give Jim Zelanak or I a call if you have additional questions or concerns thanks. JB

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA

process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

From: [Zelenak, Jim](#)
To: [Sue Livingston](#)
Subject: Re: Lynx SSA letter sent to Oregon Department of Fish and Wildlife
Date: Thursday, July 16, 2015 12:28:14 PM

Thank you!

On Thu, Jul 16, 2015 at 11:46 AM, Sue Livingston <sue_livingston@fws.gov> wrote:

Hello,

Please find attached the letter that was sent to Director Melcher of the Oregon Department of Fish and Wildlife inviting their participation in the lynx SSA process.

Regards,

Sue

~~~~~  
Sue Livingston  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service  
Oregon Fish and Wildlife Office  
2600 SE 98th Ave., Suite 100  
Portland, OR 97266  
503-231-6179  
FAX 503-231-6195  
<http://www.fws.gov/oregonfwo/>

--

Jim Zelenak, Biologist  
U.S. Fish and Wildlife Service  
Montana Ecological Services Office  
585 Shepard Way, Suite 1  
Helena, MT 59601  
(406) 449-5225 ext. 220  
[jim\\_zelenak@fws.gov](mailto:jim_zelenak@fws.gov)

**From:** [Zelenak, Jim](#)  
**To:** [Mejia, Kandi](#)  
**Subject:** Re: Lynx SSA letter and SSA Fact Sheet - FYI  
**Date:** Thursday, July 16, 2015 12:37:50 PM

---

Thank you!

On Thu, Jul 16, 2015 at 12:05 PM, Mejia, Kandi <[kandi\\_mejia@fws.gov](mailto:kandi_mejia@fws.gov)> wrote:

Attached is an informational copy for you of the letter and SSA fact sheet that is being sent to both Commissioner Goldmark and Director Jim Unsworth.

~~~~~

Kandi Mejia
Secretary
Washington Fish and Wildlife Office
Lacey, WA
(360) 753-4065

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Catton, Susan J -FS](#)
To: Tamara_Smith@fws.gov
Subject: RE: Lynx SSA and Recovery Planning contacts
Date: Thursday, July 16, 2015 3:47:23 PM

Hi Tam,

That sounds fine for SNF. I'm working on tracking down the Ontario contact. I'll get back to you on Monday.

Have a great weekend!

From: Smith, Tamara [mailto:tamara_smith@fws.gov]
Sent: Thursday, July 16, 2015 10:19 AM
To: Catton, Susan J -FS
Subject: Re: Lynx SSA and Recovery Planning contacts

Yes - I think I had your name under "manager" for SNF and Dan Ryan or Tim under "biologist" - does that sound okay? Do you know anyone who would be considered a "manager" type in Ontario? I know that Jeff Bowman is a research scientist for the Ministry of Natural Resources and Forestry (MNR), but do you know of other biologists that would fit the bill?

Thanks, Tam

On Thu, Jul 16, 2015 at 10:01 AM, Catton, Susan J -FS <scatton@fs.fed.us> wrote:

Hi Tam,

I was doing a bit of email management and came across this one from you. And I don't know if I ever replied. I'm sorry about that. Do you still need this information? -Susan

From: Smith, Tamara [mailto:tamara_smith@fws.gov]
Sent: Tuesday, May 19, 2015 1:47 PM
To: Catton, Susan J -FS
Subject: Lynx SSA and Recovery Planning contacts

Hi Susan,

Who from the Forest should I add to Jim Zelenak's (USFWS MT FO) list of contacts for the SNF for lynx recovery planning? He had your name under "manager" and there is a blank space for a "biologist" contact (one or two people). This isn't an official "recovery team" but would be people who would be involved in the lynx DPS status assessment and who can best help us understand current and future status/trends of lynx and habitats within each of the DPS subpopulations, the adequacy of current regulatory mechanisms, current/future threats and their potential magnitudes, etc.

Do you know who would be a good contact for lynx status/trends/management on the Canadian side of the border of MN?

Thanks,
Tam

--

Tamara Smith

U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East
Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

--

Tamara Smith
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 American Boulevard East
Bloomington, MN 55425
612-725-3548 ext. 2219
612-600-1599 cell

From: [Zelenak, Jim](#)
To: [Larry Crist](#)
Cc: [Jodi Bush](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter for Lynx
Date: Friday, July 17, 2015 7:21:20 AM

Thanks Larry. We received a copy here for the record. We'll talk more soon.

Jim

On Thu, Jul 16, 2015 at 2:45 PM, Larry Crist <Larry_Crist@fws.gov> wrote:

Jodi,

Fyi – we sent out the letter to Greg Sheehan Director, Utah Div. Wildlife today. Sorry for the delay but it got temporarily misplaced in our workload.

Larry Crist

Utah Field Supervisor

USFWS, Ecological Services

Office: 801-975-3330 X126

Fax: 801-975-3331

From: Bush, Jodi [mailto:jodi_bush@fws.gov]
Sent: Friday, July 10, 2015 9:56 AM
To: Larry Crist; Paul Henson
Cc: Rollie White; Jeffrey Dillon; Kate Novak; Jim Zelenak
Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter for Lynx

Larry and Paul.

Because of a high level of interest identified through AFWA and conversations with Gary Frazer, we have determined that **all states** within the range of the Lynx DPS should be updated on the status of where we are at with Lynx Recovery Planning. To that end we also invite you to participate (however you see fit) in our planning process.

In order to make sure we are reaching all states who may have an interest in the outcome of our Lynx Recovery Planning, we request that you send out the following state letter and SSA process document to your respective State Wildlife agency directors ASAP (Please see email below). We are planning on having regularly scheduled monthly calls with our state partners (information in the attached letter) and would like to make sure they are aware of the date and time of the call.

If you have unanswered questions about where we are in the process, please feel free to give me a call so I can catch you up. We also have internal coordination calls on the first Tuesday of every month. August 4th will be the next one from 10-11 MTN time. Thanks for your help. JB

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Thu, Jul 9, 2015 at 11:42 AM

Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter

To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>
Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford

<krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: Zelenak, Jim
To: Holt, Bryon
Subject: Re: Lynx
Date: Friday, July 17, 2015 10:35:19 AM

She's still at Univ. of B.C. Okanagan. Just left her a voice message and following up now with an email. I'll let you know what I hear.

Some background you may want to take a look at.

<http://biol.ok.ubc.ca/faculty/hodges.html>

On Fri, Jul 17, 2015 at 10:27 AM, Holt, Bryon <bryon_holt@fws.gov> wrote:

No I don't. But, from a snowshoe hare standpoint she is, as you know, very knowledgeable, and thus would be good to invite to the panel discussion.

On Fri, Jul 17, 2015 at 9:22 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Excellent! Thanks Bryon.

I still have not heard from Mowat but will try him again. Also will call Jeff Bowman in Ontario to gauge his interest.

I also got tentative nods from Squires, McKelvey, and Mike Schwartz at USDA Rocky Mountain Research Station. Like the candidates in Maine, I think all 3 of these guys would contribute meaningfully.

Any idea what Karen Hodges is up to lately?

On Fri, Jul 17, 2015 at 9:53 AM, Holt, Bryon <bryon_holt@fws.gov> wrote:

Jim,

See message from Clayton. Sounds like he is interested in participating on the panel. I'll talk with him next week.

Bryon

----- Forwarded message -----

From: Holt, Bryon <bryon_holt@fws.gov>

Date: Fri, Jul 17, 2015 at 8:34 AM

Subject: Re: Lynx

To: Clayton Apps <clayapps@telus.net>

Sounds good Clayton. Look forward to talking with you.

Bryon

On Thu, Jul 16, 2015 at 8:54 AM, Clayton Apps <clayapps@telus.net> wrote:

Hi Bryon,

Thanks for getting in touch. Yes, I am still involved with lynx somewhat in addition to other species. In fact I have recently been doing some work related to threats assessment and management for lynx in BC. I am interested in hearing more about the panel and possibly contributing.

I am traveling this week but I will give you a call soon. If not tomorrow then early next week.

Thanks
Clayton

Sent from my iPhone

On Jul 15, 2015, at 7:28 AM, Holt, Bryon <bryon_holt@fws.gov> wrote:

Hi Clayton,

We are in the process of putting together an expert elicitation panel to update the status of, threats to, and potential population projections for lynx given some scenarios. I remember you did some work on lynx in southern BC and Alberta a few year ago. Are you still in the lynx world? Would you be willing to participate in such a panel? If so, give me a call and we can discuss some of the specifics of what we are looking for.

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Bryon Holt
U.S. Fish and Wildlife Service
Northern Idaho Field Office, Spokane, WA
Telephone: (509) 893-8014
Fax: (509) 891-6748
email: bryon_holt@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Bush, Jodi](#)
To: [Larry Crist](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter for Lynx
Date: Monday, July 20, 2015 8:47:05 AM

thanks Larry. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Thu, Jul 16, 2015 at 2:45 PM, Larry Crist <Larry_Crist@fws.gov> wrote:

Jodi,

Fyi – we sent out the letter to Greg Sheehan Director, Utah Div. Wildlife today. Sorry for the delay but it got temporarily misplaced in our workload.

Larry Crist

Utah Field Supervisor

USFWS, Ecological Services

Office: 801-975-3330 X126

Fax: 801-975-3331

From: Bush, Jodi [mailto:jodi_bush@fws.gov]
Sent: Friday, July 10, 2015 9:56 AM
To: Larry Crist; Paul Henson
Cc: Rollie White; Jeffrey Dillon; Kate Novak; Jim Zelenak
Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter for Lynx

Larry and Paul.

Because of a high level of interest identified through AFWA and conversations with Gary Frazer, we have determined that **all states** within the range of the Lynx DPS should be updated on the status of where we are at with Lynx Recovery Planning. To that end we also invite you to participate (however you see fit) in our planning process.

In order to make sure we are reaching all states who may have an interest in the outcome of our Lynx Recovery Planning, we request that you send out the following state letter and SSA process document to your respective State Wildlife agency directors ASAP (Please see email below). We are planning on having regularly scheduled monthly calls with our state partners (information in the attached letter) and would like to make sure they are aware of the date and time of the call.

If you have unanswered questions about where we are in the process, please feel free to give me a call so I can catch you up. We also have internal coordination calls on the first Tuesday of every month. August 4th will be the next one from 10-11 MTN time. Thanks for your help. JB

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Thu, Jul 9, 2015 at 11:42 AM

Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter

To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier

<michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann

Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>,

Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>,

Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>

Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough <Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush

Field Supervisor

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225, ext.205

From: [Bush, Jodi](#)
To: [Hein, Eric](#)
Cc: [Wally Murphy](#); [Brady McGee](#); [Jim Zelenak](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Monday, July 20, 2015 12:51:06 PM

great -thanks. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Mon, Jul 20, 2015 at 1:46 PM, Hein, Eric <eric_hein@fws.gov> wrote:

Hi Jodi:

Wally tagged me to get the letter out, but I was on A/L from July 1 to 17. The letter will go out tomorrow.

Thanks,

Eric

On Mon, Jul 20, 2015 at 1:43 PM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hi Wally. Just checking in. I haven't seen a copy of your letter to the states yet. Has that happened? Our state conference call is next week so its important that they are aware.

Thanks. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>
Date: Thu, Jul 9, 2015 at 11:42 AM
Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier <michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>
Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough

<Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush

Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

--

Eric W. Hein
U.S. Fish and Wildlife Service
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
505-761-4735

From: Zelenak, Jim
To: Jodi Bush
Subject: Re: Lynx SSA State Coordination Letters
Date: Monday, July 20, 2015 1:05:58 PM

One more - we haven't seen letter for Michigan (Scott Hicks).

On Mon, Jul 20, 2015 at 1:03 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

We've received copies of coordination letters from all lynx DPS states except Wyoming (but I saw that Lisa S-S is working on getting that out), New Mexico (Wally Murphy FS), and New York (David Stilwell).

On Thu, Jul 16, 2015 at 2:34 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Oregon and Washington have sent out the letter and emailed copies to me today.

----- Forwarded message -----

From: Zelenak, Jim <jim_zelenak@fws.gov>
Date: Wed, Jul 15, 2015 at 3:55 PM
Subject: Lynx SSA State Coordination Letters
To: Jodi Bush <jodi_bush@fws.gov>

Letters sent: MT, Maine, Colorado, Idaho (2), New Hampshire, Vermont, Minnesota, Wisconsin.

Expected out this week: Washington, Michigan.

Have no update from: New Mexico, New York, Oregon, Utah, Wyoming.

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist

U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Catton, Susan J -FS](#)
To: Tamara_Smith@fws.gov
Subject: FW: Natural Resources Manager in Ontario?
Date: Monday, July 20, 2015 1:26:23 PM

Hi Tam,
Here you go

From: Ron Moen [mailto:rmoen@d.umn.edu]
Sent: Friday, July 17, 2015 10:58 AM
To: Catton, Susan J -FS
Cc: Catton, Timothy J -FS; Ryan, Daniel C -FS
Subject: Re: Natural Resources Manager in Ontario?

Hi Susan,

It would be Neil XXXX. I can't remember his name but it will come to me. He is based in Thunder Bay. Might have retired. Neil Dawson, just came to me.

"Dawson, Neil (MNR)" <neil.dawson@ontario.ca>

Ron

On 16 Jul 2015 at 20:36, Catton, Susan J -FS wrote:

From: "Catton, Susan J -FS" <scatton@fs.fed.us>
To: "Catton, Timothy J -FS" <tcatton@fs.fed.us>, "Ryan, Daniel C -FS" <dcryan@fs.fed.us>, "Ron Moen (rmoen@d.umn.edu)" <rmoen@d.umn.edu>
Subject: Natural Resources Manager in Ontario?
Date sent: Thu, 16 Jul 2015 20:36:04 +0000

Hi there,
Do you have a good contact for lynx status/trends/management in Ontario? I'm looking for a name and contact information.

Thanks, Susan

[Forest Service Shield]

Susan Catton
Forest Wildlife Biologist/Program Manager

Forest Service
Superior National Forest

p: 218-626-4304
f: 218-626-4398
scatton@fs.fed.us<<mailto:scatton@fs.fed.us>>

8901 Grand Ave. Pl.
Duluth, MN 55808

www.fs.fed.us<<http://www.fs.fed.us>>

[USDA Logo]<<http://usda.gov/>>[Forest Service

Twitter]<<https://twitter.com/forestservice>>[USDA

Facebook]<<https://www.facebook.com/pages/US-Forest-Service/1431984283714112>>

Caring for the land and serving people

--

Ron Moen

Center for Water and Environment, Natural Resources Research Institute

Biology Department, Swenson College of Science and Engineering

University of Minnesota Duluth

www.d.umn.edu/~rmoen, www.nrri.umn.edu/lynx, www.nrri.umn.edu/moose

Voice: 218-720-4372

Fax: 218-720-4328

From: [Bush, Jodi](#)
To: [David Stilwell](#)
Cc: [Jim Zelenak](#); [Mary Parkin](#)
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Monday, July 20, 2015 1:42:07 PM

David. We haven't seen a copy of your letter to the states yet. Hopefully that has gone out as the state coordination call is next week. If you have concerns or there are issues please give me a call so we can help out. Thanks. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Thu, Jul 9, 2015 at 1:45 PM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hi David. Welcome to Lynx Recovery Planning. Tom Chapman gave me your contact information. As you can see from the email string we are trying to get some letters out to our State partners on where we are with the process. Can you help us get one out to the Director of New York State Department of Conservation ? Apparently someone named Gordon Bachelor was very vocal to the AFWA folks that NY should be engaged.

It occurs to me that you might want to know where we are at as well. Please feel free to give me a call so I can catch you up.

We also are having internal coordination calls on the first Tuesday of every month. August 4th will be the next one from 10-11 MTN time. Thanks for your help. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

----- Forwarded message -----

From: **Chapman, Tom** <tom_chapman@fws.gov>
Date: Thu, Jul 9, 2015 at 1:10 PM
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
To: "Bush, Jodi" <jodi_bush@fws.gov>, David Stilwell <david_stilwell@fws.gov>
Cc: Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>

Hi Jodi,

The New England Field Office does not include New York in our service area, so as you suggested I have copied David Stilwell the PL at NYFO so he can be drawn into this process too.

Regards,

Tomm

On Thu, Jul 9, 2015 at 1:45 PM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Tom

I'm not sure if you cover New York or not. If so can you send them a letter as well. The AFWA folks have identified them as a very interested party (Director, Gordon Bachelor?). If you don't cover them can you let me know who does so I can get them in the loop? thanks for your help. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

----- Forwarded message -----

From: **Bush, Jodi** <jodi_bush@fws.gov>

Date: Thu, Jul 9, 2015 at 11:42 AM

Subject: ATTENTION -NEEDS ACTION: Updated State Coordination Letter

To: Eric Rickerson <eric_rickerson@fws.gov>, Michael Carrier

<michael_carrier@fws.gov>, Mark Sattelberg <mark_sattelberg@fws.gov>, Ann Timberman <ann_timberman@fws.gov>, Drue DeBerry <drue_deberry@fws.gov>, Laury Zicari <laury_zicari@fws.gov>, Tom Chapman <Tom_Chapman@fws.gov>, Wally Murphy <wally_murphy@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>

Cc: Jeff Krupka <Jeff_Krupka@fws.gov>, Bryon Holt <Bryon_Holt@fws.gov>, Kurt Broderdorp <Kurt_Broderdorp@fws.gov>, Tamara Smith <Tamara_Smith@fws.gov>, Ann Belleman <ann_belleman@fws.gov>, Mark McCollough

<Mark_McCollough@fws.gov>, Jim Zelenak <jim_zelenak@fws.gov>, Anthony Tur <Anthony_Tur@fws.gov>, Seth Willey <seth_willey@fws.gov>, Sarah Quamme <Sarah_Quamme@fws.gov>, Laura Ragan <Laura_Ragan@fws.gov>, Krishna Gifford <krishna_gifford@fws.gov>, Eric Hein <Eric_Hein@fws.gov>, Sarah Hall <Sarah_Hall@fws.gov>, Michael Thabault <michael_thabault@fws.gov>, Lisa Mandell <lisa_mandell@fws.gov>

Just checking to see if these letters have gone out yet (I've only seen one from Maine). Its important that they get out asap so our State folks can make the conference call later this month. Thank you for your help. JB

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

On Wed, Jul 1, 2015 at 11:00 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Hello. State Project Leaders. As I mentioned in my last email (June 26), regarding the Project Plan, we have updated the State coordination letter based on the addition of the SSA process and the subsequent altered timeline.

As you are aware, the States are particularly interested in being engaged in our Lynx recovery planning process. To that end, the letter updates where we are now and identifies a monthly coordination call with our state partners to keep them apprised of our progress.

I am requesting that each state send out versions of this letter and attachment from their offices, preferably within the next several weeks. Feel free to use the version I provided (ATTACHED) as a template.

Please cc Gary Frazer (FWS), Jonathan Mawdsley (AFWA-Fish and Wildlife Science Coordinator) jmawdsley@fishwildlife.org and Nick Wiley (AFWA Threatened and Endangered Species Policy Committee Chair) Nick.Wiley@myfwc.com and provide a copy to Jim Zelanak -our Service lynx Lead.

You'll note that we have identified the last wednesday of the month at 1pm MTN time as our standing coordination call with our State partners. It seemed appropriate to get this date identified upfront so could keep moving forward.

As always -thanks for your help. Please call if you have questions. JB

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

Thomas R. Chapman
Supervisor - New England Field Office
U.S. Fish & Wildlife Service
Northeast Region - Ecological Services
70 Commercial St., Suite 300
Concord, NH 03301

603.223.2541 ext. 6410
603.724.5104 cell

From: [Bush, Jodi](#)
To: [Mary Parkin](#)
Cc: [Jim Zelenak](#)
Subject: Fwd: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
Date: Monday, July 20, 2015 2:21:47 PM

FYI

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225, ext.205

----- Forwarded message -----

From: **Stilwell, David** <david_stilwell@fws.gov>
Date: Mon, Jul 20, 2015 at 2:02 PM
Subject: Re: ATTENTION -NEEDS ACTION: Updated State Coordination Letter
To: "Bush, Jodi" <jodi_bush@fws.gov>
Cc: Robyn Niver <Robyn_Niver@fws.gov>

Jodi,

Thanks. I have been out of the office and will pass this info along. Our office will not be very much involved in lynx issues as we are not aware of any known occurrences in New York and other priorities demand our time.

Gordon Batchelor, the Wildlife Chief has just retired. Patricia Reixenger is the Director of Fish, Wildlife and Marine Resources. We will get the info to her.

Thanks for reaching out to us.

David

From: [Jonathan Mawdsley](#)
To: [Bush, Jodi](#)
Cc: [Jim Zelenak](#)
Subject: Re: Assistance with Lynx Recovery
Date: Monday, July 20, 2015 2:24:07 PM

Hi Jodi,

Thanks for the note - I will get these for you on Thursday when I am back in the office.

All the best,
Jonathan

From: Bush, Jodi <jodi_bush@fws.gov>
Sent: Monday, July 20, 2015 4:17 PM
To: Jonathan Mawdsley
Cc: Jim Zelenak
Subject: Assistance with Lynx Recovery

Hi Jonathan. I know you are at Wafa this week so don't worry about responding til you r back in the office...

We have our state coordination call scheduled next week but realized we wanted to add some presentation over a webinar. Unfortunately we don't have the email contact information for the directors of the states we contacted.

Do you think you could send me their email addresses?

I need them for: New York, Maine, New Hampshire and Vermont
Wisconsin, Michigan and Minnesota

I have the emails and contact info for the WAFWA agencies.

Thanks for your help. If this is too onerous, we can search the internet. We thought you might have them

Jodi L. Bush
Field Supervisor
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601

(406) 449-5225, ext.205

From: Zicari, Laury
To: [McCollough, Mark](#)
Subject: Re: Lynx expert meeting
Date: Monday, July 20, 2015 3:11:46 PM

nice! done -- just right! Let's see who we "catch" in our net!

On Mon, Jul 20, 2015 at 1:49 PM, McCollough, Mark <mark_mccollough@fws.gov> wrote:
Jen, Dan, and Erin:

As you know, the USFWS has adopted a new conservation analytical approach called the Species Status Assessment Framework (SSA) to inform decisions and activities under the Endangered Species Act. We have embarked on this process to inform the 5-year review and recovery plan for the Canada lynx.

We are assembling a small group of lynx experts to solicit information on the status of lynx and their threats and project their status into the future. We are seeking the participation of scientists who can provide the best available information on lynx biology, ecology and conditions that are likely to affect the viability of the species in the future.

We consider you to be the "lynx experts" in Maine and hope that you can be involved in a 3-day meeting in Minnesota. Other experts will be invited from other lynx units within the DPS. The meeting will also involve a small, core team of Service biologists working on the 5-year review and recovery plan, and biologists from USGS and the Service who are trained in the SSA and will lead a structured process during the 3-day event.

I am reaching out to you informally to see if you would be interested in participating and if you would be available Oct. 13, 14, and 15 (travel days Oct 12 and 16) (prior to the TWS meeting in Manitoba). If not available these dates, what other dates might you be available from mid-October through mid-November?

Thanks for considering this request. This meeting will be very important to the SSA process for the lynx. I look forward to hearing back from you soon so we can schedule this meeting as soon as possible, and would be glad to answer any questions.

Sincerely, Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

From: [Zicari, Laury](#)
To: [McCollough, Mark](#)
Subject: Re: Lynx expert meeting
Date: Monday, July 20, 2015 5:11:40 PM

nice! done -- just right! Let's see who we "catch" in our net!

On Mon, Jul 20, 2015 at 1:49 PM, McCollough, Mark <mark_mccollough@fws.gov> wrote:
Jen, Dan, and Erin:

As you know, the USFWS has adopted a new conservation analytical approach called the Species Status Assessment Framework (SSA) to inform decisions and activities under the Endangered Species Act. We have embarked on this process to inform the 5-year review and recovery plan for the Canada lynx.

We are assembling a small group of lynx experts to solicit information on the status of lynx and their threats and project their status into the future. We are seeking the participation of scientists who can provide the best available information on lynx biology, ecology and conditions that are likely to affect the viability of the species in the future.

We consider you to be the "lynx experts" in Maine and hope that you can be involved in a 3-day meeting in Minnesota. Other experts will be invited from other lynx units within the DPS. The meeting will also involve a small, core team of Service biologists working on the 5-year review and recovery plan, and biologists from USGS and the Service who are trained in the SSA and will lead a structured process during the 3-day event.

I am reaching out to you informally to see if you would be interested in participating and if you would be available Oct. 13, 14, and 15 (travel days Oct 12 and 16) (prior to the TWS meeting in Manitoba). If not available these dates, what other dates might you be available from mid-October through mid-November?

Thanks for considering this request. This meeting will be very important to the SSA process for the lynx. I look forward to hearing back from you soon so we can schedule this meeting as soon as possible, and would be glad to answer any questions.

Sincerely, Mark

--

Mark McCollough, Ph.D.
Endangered Species Specialist
Maine Field Office
U. S. Fish and Wildlife Service
17 Godfrey Drive, Suite 2
Orono, ME 04473
Phone 207 866-3344 x115
Cell Phone: 207 944-5709
mark_mccollough@fws.gov

--

Laury Zicari
Field Supervisor
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
207-866-3344 x 1111
Fax 866-3351
Cell 207-949-0561

From: [Ron Moen](#)
To: [Smith, Tamara](#)
Subject: Fall 2015 -- forgot TWS
Date: Tuesday, July 21, 2015 11:30:40 AM

Hi Tam,

Might be tough to get people from 10/17 to 10/21. TWS annual meetings are in Winnipeg. I'll be going to those.

I've also got a commitment on Friday November 20th here in Duluth (M.S. student seminar).

Other than that I s/b flexible.

Ron

--

Ron Moen
Center for Water and Environment, Natural Resources Research Institute
Biology Department, Swenson College of Science and Engineering
University of Minnesota Duluth
www.d.umn.edu/~rmoen, www.nrri.umn.edu/lynx, www.nrri.umn.edu/moose
Voice: 218-720-4372
Fax: 218-720-4328

From: [Willey, Seth](#)
To: [Jim Zelenak](#); [Jodi Bush](#)
Cc: [Michael Thabault](#); [Nicole Alt](#)
Subject: Fwd: lynx ssa
Date: Tuesday, July 21, 2015 11:46:04 AM

Hey Jodi and Jim,

See below on State folks to include in Lynx SSA, as appropriate.

Thanks,
Seth

Seth L. Willey
Act Regional ESA Chief
Mountain-Prairie Region
Seth_Willey@fws.gov
303-236-4257

----- Forwarded message -----

From: **Noreen Walsh** <noreen_walsh@fws.gov>
Date: Tue, Jul 21, 2015 at 11:32 AM
Subject: lynx ssa
To: Michael Thabault <michael_thabault@fws.gov>, nicole_alt@fws.gov, Seth Willey <seth_willey@fws.gov>
Cc: Matt Hogan <matt_hogan@fws.gov>

Hi guys,

During my conversations this week WY and MT indicated that they would appreciate us including the following people in the lynx SSA and the monthly teleconferences:

MT: Bob Inman

WY: Bob Lanka

There was much interest in SSAs and some good dialogue. I think there will be much interest in this one in particular and that it will be an opportunity for us to showcase the positive nature of the process.

Thanks for all the prep,

Noreen

Noreen Walsh

Regional Director

Mountain-Prairie Region

U. S. Fish and Wildlife Service

303 236 7920

From: [Zelenak, Jim](#)
To: [Mary Parkin](#); [Heather Bell](#)
Subject: Fwd: lynx ssa
Date: Tuesday, July 21, 2015 1:48:26 PM

FYI.

Maybe, in addition to FWS State Project leaders, we should consider sending the SSA talking points to RO folks as well?

Guess the key phrase is Seth's "as appropriate." Happy to keep these and other State folks engaged, but don't think either would be considered or meet criteria for lynx expert elicitation.

----- Forwarded message -----

From: **Willey, Seth** <seth_willey@fws.gov>
Date: Tue, Jul 21, 2015 at 11:45 AM
Subject: Fwd: lynx ssa
To: Jim Zelenak <jim_zelenak@fws.gov>, Jodi Bush <jodi_bush@fws.gov>
Cc: Michael Thabault <michael_thabault@fws.gov>, Nicole Alt <nicole_alt@fws.gov>

Hey Jodi and Jim,

See below on State folks to include in Lynx SSA, as appropriate.

Thanks,
Seth

Seth L. Willey
Act Regional ESA Chief
Mountain-Prairie Region
Seth_Willey@fws.gov
303-236-4257

----- Forwarded message -----

From: **Noreen Walsh** <noreen_walsh@fws.gov>
Date: Tue, Jul 21, 2015 at 11:32 AM
Subject: lynx ssa
To: Michael Thabault <michael_thabault@fws.gov>, nicole_alt@fws.gov, Seth Willey <seth_willey@fws.gov>
Cc: Matt Hogan <matt_hogan@fws.gov>

Hi guys,

During my conversations this week WY and MT indicated that they would appreciate us including the following people in the lynx SSA and the monthly teleconferences:

MT: Bob Inman

WY: Bob Lanka

There was much interest in SSAs and some good dialogue. I think there will be much interest in this one in particular and that it will be an opportunity for us to showcase the positive nature of the process.

Thanks for all the prep,

Noreen

Noreen Walsh

Regional Director

Mountain-Prairie Region

U. S. Fish and Wildlife Service

303 236 7920

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

From: [Parkin, Mary](#)
To: [Zelenak, Jim](#)
Subject: Re: draft guidance on organizing an EE workshop for SSA
Date: Wednesday, July 22, 2015 7:22:36 AM

Hi Jim,

I got waylaid with another project yesterday but am going through this now and will reply to all within the next few hours about sending it to the core team. Re: sending outside FWS, let's discuss.

Will get back to you asap.

Mary

On Tue, Jul 21, 2015 at 5:16 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

oops - here's the attachment.

On Tue, Jul 21, 2015 at 3:15 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

I've accepted all changes to this point, then found a few other things (still visible in track changes) and attempted to align all the formatting. Why does that always take longer than you think it ought to?

Let me know when it is OK to share this with lynx SSA Core Team and perhaps other FWS folks.

Also - what are your thoughts on sharing with folks external to USFWS? We got word today that Wyoming and Montana have already requested (of R6RD) that we consider "involving" their state furbearer/carnivore biologists in the SSA process.

On Fri, Jul 17, 2015 at 9:21 AM, Smith, David <drsmith@usgs.gov> wrote:

Jonathan,

Good point about the ground rules. I added the previously written ground rules as an appendix.

Dave

David R. Smith
USGS - Leetown Science Center
11649 Leetown Road
Kearneysville, WV 25430
drsmith@usgs.gov
304-724-4467
<https://profile.usgs.gov/drsmith>
[ResearchGate profile](#)

On Fri, Jul 17, 2015 at 10:54 AM, Cummings, Jonathan <jwcummings@usgs.gov> wrote:

Just added a small edit about uncertainty and a comment about whether to expand the discussion of ground rules.

On Fri, Jul 17, 2015 at 10:42 AM, Smith, David <drsmith@usgs.gov> wrote:

Jim,

I added text to address your comments. Did it work?

Dave

David R. Smith
USGS - Leetown Science Center
11649 Leetown Road
Kearneysville, WV 25430
drsmith@usgs.gov
304-724-4467
<https://profile.usgs.gov/drsmith>
[ResearchGate profile](#)

On Fri, Jul 17, 2015 at 10:01 AM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Dave,

I accepted all changes in TC, then had these few additional thoughts/questions.

On Fri, Jul 17, 2015 at 6:54 AM, Smith, David <drsmith@usgs.gov> wrote:

Jim,

Good edits. I added a bit to the 'agenda template'.

Ok with me to circulate to the core team, but would feel better if others chime in first.

Dave

David R. Smith
USGS - Leetown Science Center
11649 Leetown Road
Kearneysville, WV 25430
drsmith@usgs.gov
304-724-4467
<https://profile.usgs.gov/drsmith>
[ResearchGate profile](#)

On Thu, Jul 16, 2015 at 4:15 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

One more edit: change "is be best format" to "is the best format" in first sentence, p. 1.

On Thu, Jul 16, 2015 at 2:09 PM, Zelenak, Jim <jim_zelenak@fws.gov> wrote:

Attached are my thoughts on the draft guidance (in TRACK CHANGES).

On Thu, Jul 16, 2015 at 8:31 AM, Smith, David <drsmith@usgs.gov> wrote:

What do you all think about distributing the draft EE guidelines to the Lynx Core Team? It is draft and comments are welcome from all (of course). However, is there anything in the current draft that should be

revised, edited, deleted before distribution?

Dave

David R. Smith
USGS - Leetown Science Center
11649 Leetown Road
Kearneysville, WV 25430
drsmith@usgs.gov
304-724-4467
<https://profile.usgs.gov/drsmith>
[ResearchGate profile](#)

On Thu, Jul 16, 2015 at 10:28 AM, Parkin, Mary

<mary_parkin@fws.gov> wrote:

Great stuff -- thanks, Dave!

BTW, I'm still going through the UTRB ms but am close. Just having to look at it "on the side" as I try to get a final rule off my desk.

Cheers,
Mary

On Wed, Jul 15, 2015 at 2:24 PM, Smith, David <drsmith@usgs.gov> wrote:

Here are draft guidelines (including some generic criteria for selecting experts and a workshop agenda template)

The source for much of this is documentation we put together for a GRSG workshop. I revised the guidance to be generic.

Pls comment and make suggestions. Seems like something along these lines will be helpful for the lynx workshop and other future workshops.

Dave

David R. Smith
USGS - Leetown Science Center
11649 Leetown Road
Kearneysville, WV 25430
drsmith@usgs.gov
304-724-4467
<https://profile.usgs.gov/drsmith>
[ResearchGate profile](#)

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

--
Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--
Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--
Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--
Jonathan W. Cummings, PhD
Research Ecologist
USGS - Leetown Science Center (remotely located)

jwcummings@usgs.gov

Remote Contact Info:
802-999-8684 - cell
243 Locust St
Dover, NH 03820

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Jim Zelenak, Biologist
U.S. Fish and Wildlife Service
Montana Ecological Services Office
585 Shepard Way, Suite 1
Helena, MT 59601
(406) 449-5225 ext. 220
jim_zelenak@fws.gov

--

Mary Parkin
Endangered Species Recovery Coordinator, Northeast Region
U.S. Fish and Wildlife Service, Hadley, MA
Remotely located in Escalante, Utah:
Mailing address PO Box 637, Escalante, UT 84726
Street address 145 North Center St, Escalante, UT 84726
Phone 617-417-3331
Email mary_parkin@fws.gov

From: [Holt, Bryon](#)
To: [Karl Halupka](#)
Subject: Re: FW: Lynx SSA letter and SSA Fact Sheet - FYI
Date: Wednesday, July 22, 2015 7:32:22 AM

Thanks Karl. I know, only too well, how these things go. So, thanks for letting me know they went out. And, also, I really appreciate your help shepherding this through.

Bryon

On Tue, Jul 21, 2015 at 3:57 PM, Karl Halupka <karl_halupka@fws.gov> wrote:

Bryon,

Sorry it took so long to close the loop on these letters. They got signed and sent from Lacey on 14 Jul.

We could use a better notification system to let folks who write letters know when they get mailed.

Pissing and moaning aside, just confirming this little task is done.

Cheers,

k

Karl Halupka

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

Central Washington Field Office

215 Melody Lane, Suite 103

Wenatchee, WA 98801-8122

Phone: 509-665-3508 x 2001

Fax: 509-665-3509

www.fws.gov/wafwo/

From: Mendez, Naim [mailto:naim_mendez@fws.gov]
Sent: Tuesday, July 21, 2015 3:28 PM

To: Karl Halupka
Subject: Fwd: Lynx SSA letter and SSA Fact Sheet - FYI

.....
Naim M. Mendez

U.S. Fish and Wildlife Service
Central Washington Field Office
215 Melody Lane #103
Wenatchee, WA 98801-8122
Phone: (509)665-3508 ext. 2010
Naim_Mendez@fws.gov

----- Forwarded message -----

From: Mejia, Kandi <kandi_mejia@fws.gov>
Date: Thu, Jul 16, 2015 at 11:05 AM
Subject: Lynx SSA letter and SSA Fact Sheet - FYI
To: Nick.Wiley@myfwc.com, jmawdsley@fishwildlife.org, gary_frazer@fws.gov,
jim_zelenak@fws.gov, Nate Pamplin <Nathan.Pamplin@dfw.wa.gov>,
allen.estep@dnr.wa.gov
Cc: Jessica Gonzales <jessica_gonzales@fws.gov>, Naim Mendez
<naim_mendez@fws.gov>

Attached is an informational copy for you of the letter and SSA fact sheet that is being sent to both Commissioner Goldmark and Director Jim Unsworth.

~~~~~

Kandi Mejia  
Secretary  
Washington Fish and Wildlife Office  
Lacey, WA  
(360) 753-4065

|

--

\*\*\*\*\*

Bryon Holt  
U.S. Fish and Wildlife Service  
Northern Idaho Field Office, Spokane, WA  
Telephone: (509) 893-8014  
Fax: (509) 891-6748  
email: [bryon\\_holt@fws.gov](mailto:bryon_holt@fws.gov)

\*\*\*\*\*

**From:** [Parkin, Mary](#)  
**To:** [Zelenak, Jim](#)  
**Cc:** [Heather Bell](#)  
**Subject:** Re: lynx ssa  
**Date:** Wednesday, July 22, 2015 9:03:09 AM

---

Agreed. In addition to the monthly calls, I think it's the appropriate liaison function of the core team members to stay in touch with their state folks, at whatever level the states are seeking. The core team members can informally share information and accept input (for further consideration), as called for by each state.

On Tue, Jul 21, 2015 at 3:48 PM, Zelenak, Jim <[jim\\_zelenak@fws.gov](mailto:jim_zelenak@fws.gov)> wrote:

FYI.

Maybe, in addition to FWS State Project leaders, we should consider sending the SSA talking points to RO folks as well?

Guess the key phrase is Seth's "as appropriate." Happy to keep these and other State folks engaged, but don't think either would be considered or meet criteria for lynx expert elicitation.

----- Forwarded message -----

**From:** **Willey, Seth** <[seth\\_willey@fws.gov](mailto:seth_willey@fws.gov)>  
**Date:** Tue, Jul 21, 2015 at 11:45 AM  
**Subject:** Fwd: lynx ssa  
**To:** Jim Zelenak <[jim\\_zelenak@fws.gov](mailto:jim_zelenak@fws.gov)>, Jodi Bush <[jodi\\_bush@fws.gov](mailto:jodi_bush@fws.gov)>  
**Cc:** Michael Thabault <[michael\\_thabault@fws.gov](mailto:michael_thabault@fws.gov)>, Nicole Alt <[nicole\\_alt@fws.gov](mailto:nicole_alt@fws.gov)>

Hey Jodi and Jim,

See below on State folks to include in Lynx SSA, as appropriate.

Thanks,  
Seth

\*\*\*\*\*

Seth L. Willey  
Act Regional ESA Chief  
Mountain-Prairie Region  
[Seth\\_Willey@fws.gov](mailto:Seth_Willey@fws.gov)  
303-236-4257

\*\*\*\*\*

----- Forwarded message -----

**From:** **Noreen Walsh** <[noreen\\_walsh@fws.gov](mailto:noreen_walsh@fws.gov)>  
**Date:** Tue, Jul 21, 2015 at 11:32 AM  
**Subject:** lynx ssa  
**To:** Michael Thabault <[michael\\_thabault@fws.gov](mailto:michael_thabault@fws.gov)>, [nicole\\_alt@fws.gov](mailto:nicole_alt@fws.gov), Seth Willey <[seth\\_willey@fws.gov](mailto:seth_willey@fws.gov)>  
**Cc:** Matt Hogan <[matt\\_hogan@fws.gov](mailto:matt_hogan@fws.gov)>

Hi guys,

During my conversations this week WY and MT indicated that they would appreciate us including the following people in the lynx SSA and the monthly teleconferences:

MT: Bob Inman

WY: Bob Lanka

There was much interest in SSAs and some good dialogue. I think there will be much interest in this one in particular and that it will be an opportunity for us to showcase the positive nature of the process.

Thanks for all the prep,

Noreen

*Noreen Walsh*

*Regional Director*

*Mountain-Prairie Region*

*U. S. Fish and Wildlife Service*

*303 236 7920*

--

Jim Zelenak, Biologist  
U.S. Fish and Wildlife Service

Montana Ecological Services Office  
585 Shepard Way, Suite 1  
Helena, MT 59601  
(406) 449-5225 ext. 220  
[jim\\_zelenak@fws.gov](mailto:jim_zelenak@fws.gov)

--

*Mary Parkin*  
*Endangered Species Recovery Coordinator, Northeast Region*  
*U.S. Fish and Wildlife Service, Hadley, MA*  
*Remotely located in Escalante, Utah:*  
*Mailing address PO Box 637, Escalante, UT 84726*  
*Street address 145 North Center St, Escalante, UT 84726*  
*Phone 617-417-3331*  
*Email [mary\\_parkin@fws.gov](mailto:mary_parkin@fws.gov)*

**From:** [Zelenak, Jim](#)  
**To:** [Kurt Broderdorp](#)  
**Subject:** Re: Lynx SSA expert - Colorado  
**Date:** Wednesday, July 22, 2015 11:22:56 AM

---

Thanks Kurt. My last email to him got an out-of-office til today, so hopefully he will get back to you.

Main points - we'd really like him to be there, but not a formal invitation yet; want to know if he is interested and potentially available to travel to Minn. Oct.-Nov.

You can give him additional info on SSA, etc. as you see fit.

Let me know if you need any other info.

On Wed, Jul 22, 2015 at 11:13 AM, Kurt Broderdorp <[Kurt\\_Broderdorp@fws.gov](mailto:Kurt_Broderdorp@fws.gov)> wrote:

Jim, I attempted to contact Jake via phone, but got his voice mail. He has been out of the office for a couple of weeks so I am sure he is playing catchup. If I don't hear from him before I leave for the day, I will send him an email and cc you.

Kurt Broderdorp

US Fish and Wildlife Service

(970) 628-7186

**From:** Zelenak, Jim [mailto:[jim\\_zelenak@fws.gov](mailto:jim_zelenak@fws.gov)]  
**Sent:** Wednesday, July 22, 2015 8:29 AM  
**To:** Kurt Broderdorp  
**Subject:** Lynx SSA expert - Colorado

Hey Kurt,

Let me know if you can reach out to Jake Ivan in the next day or two to gauge his interest and potential availability to participate in the expert elicitation meeting in Minneapolis mid.-Oct to mid-Nov. (leaning a little bit toward the week of Oct. 12 [potential meeting dates of Tues. 10/13 thru Thurs. 10/15]).

If I don't hear back from you, I will give Jake a call in the next day or two to discuss this with him.

Thanks,

Jim

--

Jim Zelenak, Biologist

U.S. Fish and Wildlife Service

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225 ext. 220

[jim\\_zelenak@fws.gov](mailto:jim_zelenak@fws.gov)

--

Jim Zelenak, Biologist

U.S. Fish and Wildlife Service

Montana Ecological Services Office

585 Shepard Way, Suite 1

Helena, MT 59601

(406) 449-5225 ext. 220

[jim\\_zelenak@fws.gov](mailto:jim_zelenak@fws.gov)

**From:** [Zelenak, Jim](#)  
**To:** [McCollough, Mark](#)  
**Subject:** Re: Lynx expert meeting  
**Date:** Wednesday, July 22, 2015 11:24:45 AM

---

Thanks, Mark! We might be able to push it back a day - we'll have to poll the participants once we have the list of invitees finalized.

I had a good call with Jay Kolbe yesterday, think he would be good to have there. Very smart and practical guy.

On Wed, Jul 22, 2015 at 11:14 AM, McCollough, Mark <[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)> wrote:  
Here is further info from Dan Harrison. Would be better to push the meeting back one day in Oct.

I have not heard back from Simons or Vashon - will send them another email.

Mark

----- Forwarded message -----

**From:** Daniel Harrison <[harrison@maine.edu](mailto:harrison@maine.edu)>  
**Date:** Tue, Jul 21, 2015 at 12:55 PM  
**Subject:** Re: Lynx expert meeting  
**To:** "McCollough, Mark" <[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)>

Hi Mark,

I have a commitment on 10/12 but could fly out first thing on the 13th and join in by late morning. Alternatively, is there any chance that we could travel on the 13th and meet 14th, 15th, 16th in MN. That would also work best for TWS as things don't really get going there until Sat evening and it would be a quick jump to Winnipeg on Sat morning. My weeks of 5-9 Oct (3-day FWS mtg in Hadley), 19-23 Oct (TWS-Manitoba), 26-30 October (fall CFRU field tour and meeting) are already shot.

9/28-10/2 is also an option.

All WFCB faculty are holding the first 3 weeks of November for our 10-year external departmental review (3 days dependent on schedules of review team, Dean, and Provost). I don't expect those dates to be finalized until the first week of September and will need need to be around before the review for lots of preparation.

The short of it is that is is safest for me to stick with the October 13-16 window (October 14-16 meeting dates preferred, but Oct 13-15 could also work if I can arrive late morning).

Dan

Daniel J. Harrison  
Professor and Chair - Department of Wildlife, Fisheries, and Conservation Biology

Cooperating Professor of Sustainable Forestry  
The University of Maine  
5755 Nutting Hall, Room 210  
Orono, ME 04469-5755  
(207) 581-2867  
[harrison@maine.edu](mailto:harrison@maine.edu)

On Mon, Jul 20, 2015 at 1:49 PM, McCollough, Mark <[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)>  
wrote:

Jen, Dan, and Erin:

As you know, the USFWS has adopted a new conservation analytical approach called the Species Status Assessment Framework (SSA) to inform decisions and activities under the Endangered Species Act. We have embarked on this process to inform the 5-year review and recovery plan for the Canada lynx.

We are assembling a small group of lynx experts to solicit information on the status of lynx and their threats and project their status into the future. We are seeking the participation of scientists who can provide the best available information on lynx biology, ecology and conditions that are likely to affect the viability of the species in the future.

We consider you to be the "lynx experts" in Maine and hope that you can be involved in a 3-day meeting in Minnesota. Other experts will be invited from other lynx units within the DPS. The meeting will also involve a small, core team of Service biologists working on the 5-year review and recovery plan, and biologists from USGS and the Service who are trained in the SSA and will lead a structured process during the 3-day event.

I am reaching out to you informally to see if you would be interested in participating and if you would be available Oct. 13, 14, and 15 (travel days Oct 12 and 16) (prior to the TWS meeting in Manitoba). If not available these dates, what other dates might you be available from mid-October through mid-November?

Thanks for considering this request. This meeting will be very important to the SSA process for the lynx. I look forward to hearing back from you soon so we can schedule this meeting as soon as possible, and would be glad to answer any questions.

Sincerely, Mark

--

Mark McCollough, Ph.D.  
Endangered Species Specialist  
Maine Field Office  
U. S. Fish and Wildlife Service  
17 Godfrey Drive, Suite 2  
Orono, ME 04473  
Phone [207 866-3344](tel:207-866-3344) x115  
Cell Phone: [207 944-5709](tel:207-944-5709)  
[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)

--

Mark McCollough, Ph.D.  
Endangered Species Specialist  
Maine Field Office  
U. S. Fish and Wildlife Service  
17 Godfrey Drive, Suite 2  
Orono, ME 04473  
Phone 207 866-3344 x115  
Cell Phone: 207 944-5709  
[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)

--

Jim Zelenak, Biologist  
U.S. Fish and Wildlife Service  
Montana Ecological Services Office  
585 Shepard Way, Suite 1  
Helena, MT 59601  
(406) 449-5225 ext. 220  
[jim\\_zelenak@fws.gov](mailto:jim_zelenak@fws.gov)

**From:** [McCollough, Mark](#)  
**To:** [Jim Zelenak](#)  
**Subject:** Fwd: Lynx expert meeting  
**Date:** Wednesday, July 22, 2015 11:48:38 AM

---

One more positive response for mid-Oct...I still have yet to hear from Jen. Mark

----- Forwarded message -----

**From:** **Erin Simons-Legaard** <[erin.simons@maine.edu](mailto:erin.simons@maine.edu)>  
**Date:** Wed, Jul 22, 2015 at 1:46 PM  
**Subject:** Re: Lynx expert meeting  
**To:** "McCollough, Mark" <[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)>

Hi Mark,

Oct 13-16 would be fine with me. I currently have little on my schedule mid-Oct to mid-Nov.

Thanks,  
Erin

Erin Simons-Legaard  
Research Assistant Professor  
School of Forest Resources  
5755 Nutting Hall  
University of Maine  
Orono, ME 04469-5755  
[erin.simons@maine.edu](mailto:erin.simons@maine.edu)

On Wed, Jul 22, 2015 at 1:17 PM, McCollough, Mark <[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)> wrote:  
Jen and Erin: I have not heard back from either of you concerning your availability in mid-Oct to mid-Nov to participate in the Service's lynx expert meeting in Minnesota. I hope you are interested and available. There seems to be considerable interest in Oct 13-16 dates just prior to the national TWS meeting. Please let me know of your interest and availability from mid-Oct through mid-Nov.

Thanks, Mark

--

Mark McCollough, Ph.D.  
Endangered Species Specialist  
Maine Field Office  
U. S. Fish and Wildlife Service  
17 Godfrey Drive, Suite 2  
Orono, ME 04473  
Phone [207 866-3344](tel:207-866-3344) x115  
Cell Phone: [207 944-5709](tel:207-944-5709)  
[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)

--

Mark McCollough, Ph.D.  
Endangered Species Specialist  
Maine Field Office  
U. S. Fish and Wildlife Service  
17 Godfrey Drive, Suite 2  
Orono, ME 04473  
Phone 207 866-3344 x115  
Cell Phone: 207 944-5709  
[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)

**From:** [Holt, Bryon](#)  
**To:** [Zelenak, Jim](#)  
**Cc:** [Mark McCollough](#); [Tamara Smith](#); [Kurt Broderdorp](#); [Mary Parkin](#); [Heather Bell](#); [David Smith](#); [Jonathan Cummings](#); [Jennifer Szymanski](#); [Jodi Bush](#); [Seth Willey](#)  
**Subject:** Re: Update on lynx expert elicitation candidates  
**Date:** Wednesday, July 22, 2015 11:50:43 AM

---

Jim,

I've been meaning to let you know that I spoke with Clayton this past Monday, and he confirmed that he is interested in participating in the meeting. However, as with Gary Koehler, Clayton is an independent researcher, and thus we would need to fund his travel. Also, I noticed that your table (which actually jogged my memory to send this email) identified Clayton as a presenter only. I would offer that, dependent on the importance of lynx immigration from Canada at sustaining/supporting lynx populations in lower 48, Clayton may be able to contribute to the expert panel discussion as well, given his knowledge of lynx populations in Canada and what he thinks they may be in future.

Bryon

On Wed, Jul 22, 2015 at 10:10 AM, Zelenak, Jim <[jim\\_zelenak@fws.gov](mailto:jim_zelenak@fws.gov)> wrote:

Because of the tight time line for lining up the expert meeting, the Core Team has been reaching out informally to potential expert candidates and/or presenters.

We've had lots of interest and, fortunately, most are potentially available for the mid-Oct. - mid Nov. time frame.

The attached document summarizes outreach and responses thus far. Also downloaded to the SSA Google Drive (2015 07 22 Lynx SSA Expert Workshop Candidates), where Core Team may update as additional responses come in or with recommendations for the highlighted areas.

Let me know if you have questions.

--

Jim Zelenak, Biologist  
U.S. Fish and Wildlife Service  
Montana Ecological Services Office  
585 Shepard Way, Suite 1  
Helena, MT 59601  
(406) 449-5225 ext. 220  
[jim\\_zelenak@fws.gov](mailto:jim_zelenak@fws.gov)

--

\*\*\*\*\*

Bryon Holt  
U.S. Fish and Wildlife Service  
Northern Idaho Field Office, Spokane, WA  
Telephone: (509) 893-8014  
Fax: (509) 891-6748  
email: [bryon\\_holt@fws.gov](mailto:bryon_holt@fws.gov)

\*\*\*\*\*

**From:** [Zelenak, Jim](#)  
**To:** [McCollough, Mark](#)  
**Subject:** Re: Lynx expert meeting  
**Date:** Wednesday, July 22, 2015 1:24:48 PM

---

Thanks, Mark! We might be able to push it back a day - we'll have to poll the participants once we have the list of invitees finalized.

I had a good call with Jay Kolbe yesterday, think he would be good to have there. Very smart and practical guy.

On Wed, Jul 22, 2015 at 11:14 AM, McCollough, Mark <[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)> wrote:  
Here is further info from Dan Harrison. Would be better to push the meeting back one day in Oct.

I have not heard back from Simons or Vashon - will send them another email.

Mark

----- Forwarded message -----

**From:** Daniel Harrison <[harrison@maine.edu](mailto:harrison@maine.edu)>  
**Date:** Tue, Jul 21, 2015 at 12:55 PM  
**Subject:** Re: Lynx expert meeting  
**To:** "McCollough, Mark" <[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)>

Hi Mark,

I have a commitment on 10/12 but could fly out first thing on the 13th and join in by late morning. Alternatively, is there any chance that we could travel on the 13th and meet 14th, 15th, 16th in MN. That would also work best for TWS as things don't really get going there until Sat evening and it would be a quick jump to Winnipeg on Sat morning. My weeks of 5-9 Oct (3-day FWS mtg in Hadley), 19-23 Oct (TWS-Manitoba), 26-30 October (fall CFRU field tour and meeting) are already shot.

9/28-10/2 is also an option.

All WFCB faculty are holding the first 3 weeks of November for our 10-year external departmental review (3 days dependent on schedules of review team, Dean, and Provost). I don't expect those dates to be finalized until the first week of September and will need need to be around before the review for lots of preparation.

The short of it is that is is safest for me to stick with the October 13-16 window (October 14-16 meeting dates preferred, but Oct 13-15 could also work if I can arrive late morning).

Dan

Daniel J. Harrison  
Professor and Chair - Department of Wildlife, Fisheries, and Conservation Biology

Cooperating Professor of Sustainable Forestry  
The University of Maine  
5755 Nutting Hall, Room 210  
Orono, ME 04469-5755  
(207) 581-2867  
[harrison@maine.edu](mailto:harrison@maine.edu)

On Mon, Jul 20, 2015 at 1:49 PM, McCollough, Mark <[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)>  
wrote:

Jen, Dan, and Erin:

As you know, the USFWS has adopted a new conservation analytical approach called the Species Status Assessment Framework (SSA) to inform decisions and activities under the Endangered Species Act. We have embarked on this process to inform the 5-year review and recovery plan for the Canada lynx.

We are assembling a small group of lynx experts to solicit information on the status of lynx and their threats and project their status into the future. We are seeking the participation of scientists who can provide the best available information on lynx biology, ecology and conditions that are likely to affect the viability of the species in the future.

We consider you to be the "lynx experts" in Maine and hope that you can be involved in a 3-day meeting in Minnesota. Other experts will be invited from other lynx units within the DPS. The meeting will also involve a small, core team of Service biologists working on the 5-year review and recovery plan, and biologists from USGS and the Service who are trained in the SSA and will lead a structured process during the 3-day event.

I am reaching out to you informally to see if you would be interested in participating and if you would be available Oct. 13, 14, and 15 (travel days Oct 12 and 16) (prior to the TWS meeting in Manitoba). If not available these dates, what other dates might you be available from mid-October through mid-November?

Thanks for considering this request. This meeting will be very important to the SSA process for the lynx. I look forward to hearing back from you soon so we can schedule this meeting as soon as possible, and would be glad to answer any questions.

Sincerely, Mark

--

Mark McCollough, Ph.D.  
Endangered Species Specialist  
Maine Field Office  
U. S. Fish and Wildlife Service  
17 Godfrey Drive, Suite 2  
Orono, ME 04473  
Phone [207 866-3344](tel:207-866-3344) x115  
Cell Phone: [207 944-5709](tel:207-944-5709)  
[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)

--

Mark McCollough, Ph.D.  
Endangered Species Specialist  
Maine Field Office  
U. S. Fish and Wildlife Service  
17 Godfrey Drive, Suite 2  
Orono, ME 04473  
Phone 207 866-3344 x115  
Cell Phone: 207 944-5709  
[mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)

--

Jim Zelenak, Biologist  
U.S. Fish and Wildlife Service  
Montana Ecological Services Office  
585 Shepard Way, Suite 1  
Helena, MT 59601  
(406) 449-5225 ext. 220  
[jim\\_zelenak@fws.gov](mailto:jim_zelenak@fws.gov)



IN REPLY REFER TO:  
FWS/R6  
ES

# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

### Mountain-Prairie Region

MAILING ADDRESS:  
P.O. BOX 25486, DFC  
Denver, Colorado 80225-0486

STREET LOCATION:  
134 Union Boulevard  
Lakewood, Colorado 80228-1807



April 11, 2012

#### Memorandum

To: Assistant Director – International Affairs, Division of Management Authority  
Attention: Robert Gabel

From: Acting Assistant Regional Director – Ecological Services, Region 6

Subject: Impacts of the CITES Export Program for Furbearers on the Canada Lynx

This responds to your March 12, 2012 memorandum requesting re-initiation of consultation under Section 7 of the Endangered Species Act (ESA) on the effects of the CITES Export Program for Appendix-II Furbearer Species (Program) on the threatened Canada lynx (*Lynx canadensis*) due to a change in the action. The Division of Management Authority (DMA) is proposing to extend the term of the Program from 10 years to indefinitely. At issue is the potential take of the Canada lynx caused by the Program, which provides export authorization for pelts of legally trapped bobcat (*Lynx rufus*). We received your request for consultation on March 20, 2012.

We issued a biological opinion (BiOp) to the DMA on a proposed 10-year Program on September 24, 2001. The BiOp, which is herein incorporated by reference, includes a finding that implementation of the Program is not likely to jeopardize the continued existence of the Canada lynx.

On July 30, 2007, you notified us by memorandum of an increase in bobcat harvest levels from those considered in the BiOp; your July 30 memorandum is herein incorporated by reference. We subsequently determined that re-initiation of consultation was not necessary because effects to the Canada lynx from the Program beyond those anticipated in the BiOp had not been documented; our March 10, 2008, memorandum also is incorporated by reference.

Since the issuance of the BiOp in 2001, take of Canada lynx by various trapping methods has been documented; however, take of lynx attributable to the Program has been limited to eight trappings where the lynx were released unharmed. Since 2001, zero to two incidental lynx trappings occurred annually under the auspices of the Program. One of the eight lynx captured occurred after the BiOp had expired, but is being included in the analysis to provide a complete picture of the Program's consistency with expected effects and level of take. It is to be noted that lynx have been taken via non-bobcat trap sets (e.g., red fox), and taken by a bobcat set under the authority of a Tribe that was not part of the Program; incidental take of these individuals were not exempted by the BiOp or included in our analysis.

The BiOp includes a finding that take in the form of two lynx killed and two lynx injured annually due to trapping is likely to occur with implementation of the Program. Take in the form of up to two lynx trapped annually and released uninjured has been documented over the last 10.5 years. Take resulting in injury or death has not been documented over the last 10.5 years. Relying on the above information, no additional take over that addressed in the BiOp is expected to be caused by the Program for the foreseeable future. On that basis, the only changes needed to the BiOp are: 1) to replace the term of the action from 10 years to indefinitely throughout the document; 2) to acknowledge that the type and scope of effects of extending the duration of the Program on the Canada Lynx are identical to the type and scope of effects currently addressed in the BiOp; and 3) despite extending time frame of the Program to an indefinite period, the Service continues to conclude that the action will not jeopardize the continued existence of lynx across its range. Additionally, all of the terms and conditions included as part of the Incidental Take Statement (ITS) in the BiOp will continue to apply.

This memorandum constitutes a formal modification of the BiOp to reflect the change in the term of proposed action, and the additional consultation history and effects findings discussed above. The no jeopardy finding and ITS remain valid for the revised Program term. Please attach this memorandum to the BiOp; collectively, the BiOp and this memorandum constitute your ESA Section 7(a)(2) compliance documentation for the Program. As referenced in the BiOp, the re-initiation criteria at 402.16 still apply.

If you have any questions about this matter or your responsibilities under the ESA, please contact Bridget Fahey at the above address or at (303) 236-4258.



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE Mountain-Prairie Region



IN REPLY REFER TO:  
FWS/R6/ES  
TAILS # 06E00000-2013-TA-0007

MAILING ADDRESS:  
P.O. Box 25486, DFC  
Denver, Colorado 80225-0486

STREET LOCATION:  
134 Union Boulevard  
Lakewood, Colorado 80228-1807

**JUL 12 2013**

### Memorandum

To: USFWS Project Leader, Ecological Services, Colorado Field Office  
Attention: Susan Linner

From: Assistant Regional Director, Ecological Services 

Subject: Changes for Intra-Service Section 7 Consultation to (GJ-602-F-034) to Colorado's Section 6 Cooperative Agreement regarding a Conservation Plan for Canada Lynx in Colorado.

On November 14, 2002, the U.S. Fish and Wildlife Service (Service) concluded Intra-Service consultation on the effects of entering into a Section 6 Agreement with Colorado (Conservation Plan Agreement). The consultation was completed pursuant to section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.; [Act]). That consultation's biological opinion (BO) concluded that the direct and indirect effects of the Conservation Plan would not be likely to jeopardize the continued existence of the Canada lynx (*Lynx canadensis*), a species listed as threatened under the Act. Further, the Service found that the Plan would substantially improve the conservation and recovery of the lynx. The original consultation assumed a 5 year time frame, but based on the success of the reintroduction and lack of incidental take, the Service modified the consultation on February 20, 2013, extending the consultation through 2023.

The Conservation Plan (as amended) included a requirement for bobcat hunters and landowners to sign a form provided by the state so that if their hunting or livestock predation control activities resulted in the take of a lynx, they would be covered under the exemption provision for incidental take in the BO. Otherwise that take would be prohibited under section 9 of the Act. Incidental take from the use of snares was not exempted. The reason for these prerequisites regarding incidental take (i.e. annual signup) and constraints (not including take exemption for snares) was due to the uncertainty regarding potential conflicts between lynx, hunters, and livestock in the newly begun reintroduction effort. Specifically, the sign up form was intended to ensure that Colorado hunters and landowners were made aware of the new program and ways to reduce potential impacts to lynx.

In the 11 years since the consultation, the reintroduction has been successful and there has not been any reported incidental take from the use of traps or snares. This indicates that the risk to lynx from these tools is lower than originally thought.

Also, since the consultation, there has been significant advancement in the ability to educate the hunting and general public through electronic mediums; the public is now well informed about the lynx and reintroduction efforts.

Given those considerations, the Service does not believe that the requirement for use of the sign up form is still necessary. Additionally, the Service is adding the use of snares to the exemption from the prohibition on take provided in the take statement of the BO.

We believe this change is within the range of impacts considered in the BO and that the no jeopardy conclusion is still well supported. We also find that no additional take over that addressed in the BO is expected to be caused by the Conservation Plan for the foreseeable future.

Therefore, this memorandum constitutes a formal modification of the BO and its incidental take statement to reflect the changes discussed above. Please attach this memorandum to the BO; collectively, the BO and this memorandum constitute the ESA section 7(a)(2) compliance documentation for the Conservation Plan.

If you have any questions about this matter or your responsibilities under the ESA, please contact Bridget Fahey at the above address or at (303) 236-4258.



WILEY

---

Lynx Demography during a Snowshoe Hare Decline in Alberta

Author(s): Christopher J. Brand and Lloyd B. Keith

Source: *The Journal of Wildlife Management*, Vol. 43, No. 4 (Oct., 1979), pp. 827-849

Published by: Wiley on behalf of the Wildlife Society

Stable URL: <http://www.jstor.org/stable/3808267>

Accessed: 18-06-2018 21:02 UTC

---

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://about.jstor.org/terms>



JSTOR

*Wildlife Society, Wiley* are collaborating with JSTOR to digitize, preserve and extend access to *The Journal of Wildlife Management*

# LYNX DEMOGRAPHY DURING A SNOWSHOE HARE DECLINE IN ALBERTA

CHRISTOPHER J. BRAND,<sup>1</sup> Department of Wildlife Ecology, University of Wisconsin, Madison, WI 53706  
LLOYD B. KEITH, Department of Wildlife Ecology, University of Wisconsin Madison, WI 53706

**Abstract:** Demographic changes in lynx (*Lynx canadensis*) populations in Alberta were studied by examining 1,108 lynx carcasses collected from trappers during winters 1971–72 through 1975–76. Both snowshoe hare (*Lepus americanus*) and lynx populations declined during this interval from their cyclic peaks to low levels. Indices of consumption rates by lynx decreased with declining hare population levels. Concomitant decreases in indices of body fat of lynx during late winter suggested that lynx experienced a negative energy balance during hare scarcity. Lynx pregnancy rates and litter sizes also decreased during the population decline. Annual finite rates of reproductive increase fell 38%. Kittens were underrepresented in trapped samples; the proportion of kittens in adjusted age ratios dropped from 66% during 1971–72 (year of hare abundance) to 3% during 1973–76 (years of hare scarcity). Postpartum mortality of kittens, ranging from 65 to 95%, was the predominant cause of lowered recruitment to winter populations. Rates of trapping mortality were positively related to average pelt value, and appeared additive to nontrapping mortality. By curtailing lynx trapping during 3 years of population decline, we estimated that the total Alberta lynx harvest during 5 years of subsequent increase would be greater than that of a continuously trapped population. We suggest curtailment of lynx trapping for 3–4 years starting with the 2nd year after the peak in fur harvests.

J. WILDL. MANAGE. 43(4):827–849

Recent increases in raw fur prices have increased the possibility of overexploiting lynx populations in North America. The average price of lynx pelts in Canada, for example, rose from \$38 to \$216 between 1971–72 and 1975–76 (Statistics Canada 1973, 1977). In Alaska, improved access to remote areas from road construction during oil and mineral exploration and development, along with the advent of snowmobiles and all-terrain vehicles, have greatly enhanced the mobility and efficiency of trappers (Berrie 1974:39). Similar events have occurred in Canada. Long-term studies of lynx population dynamics are needed to provide a basis for responsible management decisions.

Snowshoe hares are the staple food of lynx at all phases of the 10-year cycle (Saunders 1963b, van Zyll de Jong 1966, Nellis et al. 1972, Brand et al. 1976). This

reliance of lynx upon hares explains the correspondence between lynx and hare cycles (Elton and Nicholson 1942, Keith 1963). Brand et al. (1976) summarized both the dietary and numerical responses of lynx to changing hare densities near Rochester, Alberta, during the winters of 1964–65 through 1967–68 and 1971–72 through 1974–75. In conjunction with these investigations of lynx populations at Rochester, we collected lynx carcasses from trappers throughout forested regions of Alberta during the winters of 1971–72 through 1975–76. Our objective was to increase understanding of demographic mechanisms of region-wide lynx populations. In this paper we examine changes in diet, physical condition, reproductive performance, sex and age structure, and mortality of regional lynx populations in relation to changes in hare abundance.

We gratefully acknowledge field and laboratory assistance by E. Anderson, C. A. Fischer, D. Keith, R. Munstermann, D. Painter, J. L. Pease, A. W. Todd, E.

<sup>1</sup> Present address: National Wildlife Health Laboratory, USFWS, 1655 Linden Dr., Madison, WI 53706.

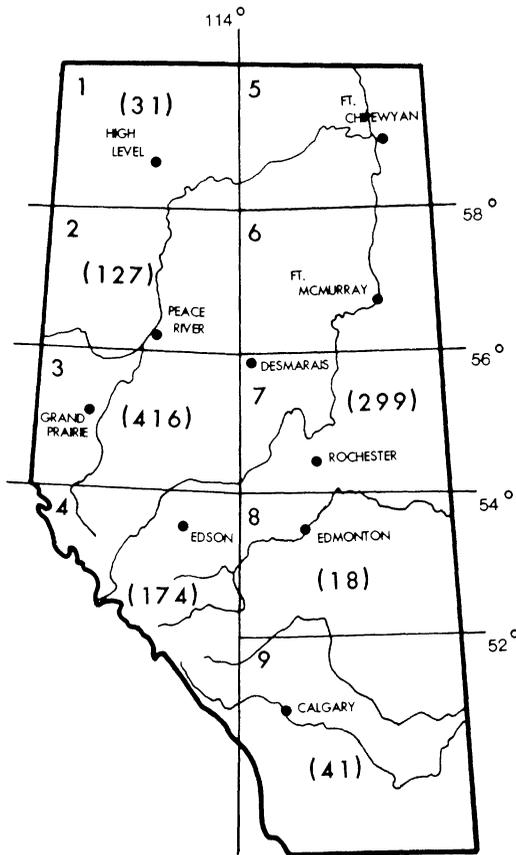


Fig. 1. Number of lynx carcasses (in parentheses) collected from trappers in 7 regions of Alberta during the winters of 1971-72 through 1975-76.

Vowles, L. A. Windberg, and D. Wing. Advice was provided by T. M. Yuill, O. J. Rongstad, R. P. Hanson, E. W. Beals, and H. W. Mossman. Special credit is due to J. R. Cary for statistical and computer-programming assistance. We also thank those trappers in Alberta who cooperated with us during this study.

Financial support was provided by the University of Wisconsin College of Agricultural and Life Sciences, and the Research Committee of the Graduate School; the Alberta Departments of Recreation, Parks, and Wildlife (Fish and Wildlife Division) and Agriculture (Veterinary

Services Branch); The Research Council of Alberta; and the National Science Foundation (Grant No. GB 33320X).

**MATERIALS AND METHODS**

*Snowshoe Hare Population Trends.*— Population indices were calculated for Alberta from questionnaires sent to approximately 600 registered trappers each January from 1963 through 1976. Trappers were asked if hares were abundant, average, or scarce; and if hare numbers increased, decreased, or did not change from the previous winter. Responses numbered 140 to 256 yearly.

To investigate area differences in snowshoe hare population levels, the Province of Alberta was divided into 9 geographic regions (Fig. 1). We calculated indices of hare abundance for each of these 9 regions. Abundance values of 1, 2, and 3 were assigned to the responses of scarce, average, and abundant, respectively. The following equation was then used to calculate the hare abundance index (*I*):

$$I = \left[ \left( \sum_{i=1}^n R_i - n \right) / 2n \right] \times 100$$

where *R<sub>i</sub>* is the numerical value assigned to the *i*th trapper response, and *n* is the number of trappers responding from a given region. This index thus expresses the cumulative response value of trappers in a given region as a percentage of the range of possible values. For example, if all trappers reported hares scarce, the index would be zero; if all reported hares abundant, it would be 100.

We assessed the reliability of this approach by comparing hare population indices calculated from responses of trappers in region 7 each winter with mean densities of hares (1 Dec) on 4 study areas within region 7 used for intensive studies of snowshoe hare populations

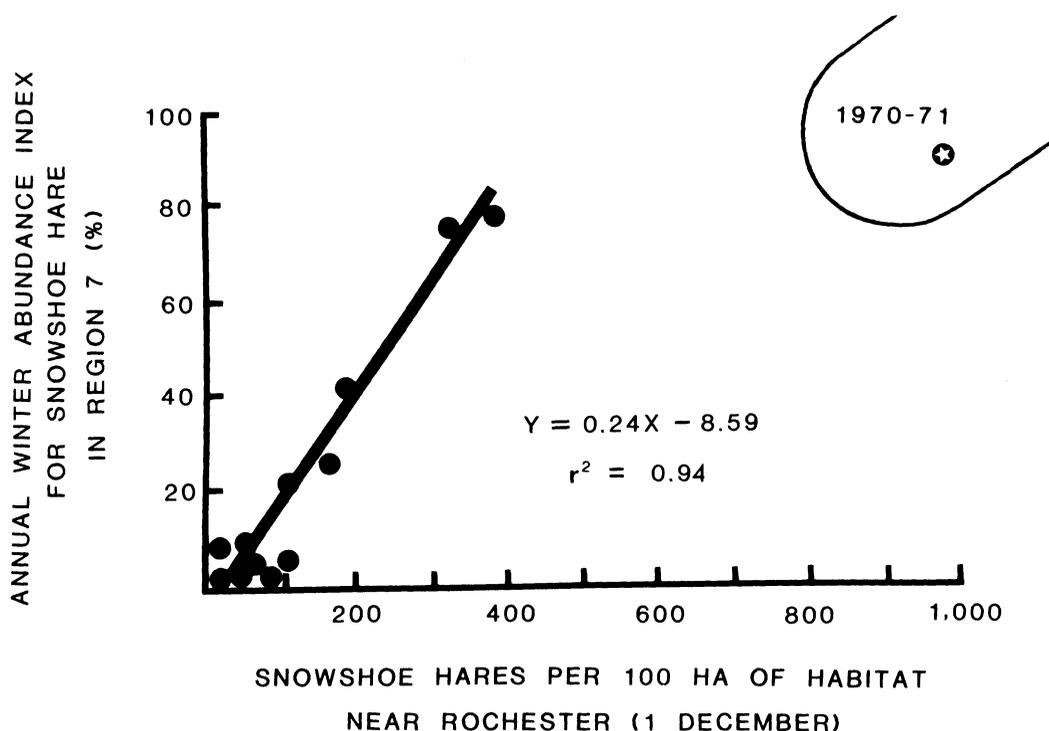


Fig. 2. The relationship between estimated 1 December densities of snowshoe hares on 4 study areas near Rochester, Alberta (Keith et al. 1977; Keith, unpublished data) and hare-abundance indices calculated from trapper questionnaires from region 7 (Fig. 1) during the winters of 1963-64 through 1975-76. Index for 1970-71 was excluded from regression analysis; see text for explanation.

near Rochester, Alberta (Keith et al. 1977). The relationship between the regional questionnaire index and hare densities on these 4 areas was linear ( $r = 0.97$ ,  $df = 10$ ) up to densities of about 400 hares/100 ha of habitat (Fig. 2). At that population level, most trappers reported hares abundant, and it was impossible for the index value to continue to increase in proportion to further increases in hare densities. Only during the peak winter of 1970-71 did densities exceed 400/100 ha. During the period covered by the present study (1971-72 through 1975-76), December hare densities at Rochester declined from 388 to 5/100 ha.

*Lynx Carcass Collection.*—Carcasses (1,108) were obtained from trappers in

Alberta during winters 1971-72 through 1975-76 (Fig. 1); 5 others were obtained by shooting or were recovered dead along a road. In 1971-72 all carcasses were obtained from the Swan Hills area in west-central Alberta (region 3); and in 1975-76 from Swan Hills and the High Level area in northwest Alberta (regions 1 and 2). During other winters, carcasses were obtained from trappers in all forested regions of Alberta except the area northeast of Desmarais (regions 5 and 6).

One hundred twenty-five trappers cooperated for 1 or more trapping seasons (1 Nov-28 Feb) by saving skinned lynx carcasses. This represented about 5% of the registered trappers in Alberta, and the reported catch comprised 5 to 6% of

the provincial lynx harvest during 1972–73, 1973–74, and 1974–75. Likewise, total trapline area of the cooperating trappers (21,650 km<sup>2</sup>) represented roughly 4% of an estimated 531,000 km<sup>2</sup> of lynx habitat in Alberta.

*Lynx Diet.*—Food habits were determined from remains in gastrointestinal tracts. Stomach and intestinal contents were weighed separately, and percent volume of each food item was visually estimated to the nearest 20%. Numbers and species of prey and carrion were identified from hair, bones, teeth, claws, feathers, or beaks. Lynx hair was commonly found in stomachs, but was not considered to represent food unless it was accompanied by bones and/or large chunks of flesh that we believed to be lynx. Reference collections in museums at the universities of Alberta and Wisconsin were used to help identify prey species.

Mean weights of prey species recorded by us at Rochester, or obtained from the literature, were multiplied by numbers present in each stomach or intestine to estimate percent biomass in the lynx diet. If prey weight exceeded that of a hare, for example beaver (*Castor canadensis*) and deer (*Odocoileus* spp.), we assumed that its occurrence represented a meal equivalent in biomass to 1 hare. This assumption was based on the fact that mean weight of carrion and/or larger prey in the stomachs of 21 lynx (167 + 87 g) was not statistically different from that in 205 stomachs containing 1 hare only (160 ± 28 g).

We were unable to separate remains of baits used by trappers from foods obtained during natural feeding by lynx. Hence there is a bias of unknown magnitude in our food-habits analysis. Although not all lynx sets are baited, trappers often use flesh and organs from a

variety of skinned carcasses. If bait is consumed, however, its occurrence may not be recognized. Baits used by trappers may have reflected availability of foods normally utilized by lynx, as suggested by MacPherson (1969:19) for trapped arctic foxes (*Alopex lagopus*). The sample (5) of gastrointestinal tracts from lynx that were not trapped, and whose contents were thus not biased by use of bait, was too small for meaningful comparisons with trapped lynx.

*Fat Reserves in Lynx.*—Many methods have been used to describe the physical and nutritional status of wildlife, including weight-length relationships (Bandy et al. 1956, Bailey 1968), blood parameters (Bandy et al. 1957, Wilson and Hirst 1977), and estimates or measurements of stored fat (Cheatum 1949; Riney 1955; Ransom 1965; Flux 1970, 1971; Smith 1970; Caughley 1971).

We measured 2 indices of total body fat, renal and subcutaneous fat deposits, which we equated directly with nutritional status. These were evaluated visually on a scale of 1 (none) to 5 (very abundant).

*Reproductive Performance of Lynx.*—Female reproductive tracts were fixed in 10% formalin. Assessment of reproductive performance was based on corpora lutea and placental scars. Corpora lutea of previous pregnancies in lynx have been referred to as corpora albicantia (Saunders 1961, van Zyll de Jong 1963, Nava 1970, Stewart 1973), but Crowe (1975:186–187) pointed out that this is a misnomer in bobcats (*Lynx rufus*). Since luteal bodies of previous pregnancies appear similar in lynx to those in bobcats (Saunders 1961), we refer to these as corpora lutea, with the understanding that they are derived from both mature and degenerate (atretic) follicles of past breeding seasons (Mossman and Duke

1973:49). We interpreted the presence of corpora lutea as evidence of previous ovulations, thus sexual maturity. Counts of corpora lutea were used to assess ovulation rates.

From placental scars we determined implantation rates (percentage of females with implantation sites) and in utero litter sizes. We considered all individuals with implantation sites as having been pregnant, and thus equate implantation rate and pregnancy rate (percent females pregnant). Reproductive tracts were removed from the carcasses and held to a strong light; opaque areas in the uterine horns were counted as apparent implantation sites. This method of counting placental scars accurately reflected litter sizes among postpartum European foxes (*Vulpes vulpes*) of known reproductive history (E. K. Barth, personal communication cited in MacPherson 1969:29), and has been used to assess pregnancy in foxes (Layne and McKeon 1956, McEwen and Scott 1957, Englund 1970) and lynx (Saunders 1961, Nava 1970).

*Age Determination of Lynx.*—Ages over 1-year-old were determined by dark-staining layers, or annuli, observed in cementum of canine teeth. Canines were removed by boiling skulls. After storage in 10% formalin, the canines were decalcified in 5% HNO<sub>3</sub> until soft and sectioned longitudinally with a freezing microtome. Six to 12 sections of the canine root (15–20 μm thick) were stained with haematoxylin as described by Nellis (1975), and observed under 100 power with a microprojector. This method of age determination has not been tested with lynx of known age. We found dark-staining layers similar in appearance to yearly annuli of bobcat and coyote (*Canis latrans*) teeth (Linhart and Knowlton 1967, Crowe 1972, Fritts 1973), and many other species (Klevezal and

Kleinenberg 1969). Nellis et al. (1972) found that teeth of 5 marked lynx whose minimum ages were known showed at least the minimum expected number of annuli.

The 1st annuli of bobcats and coyotes appear to be deposited at the periodontal-cementum interface toward the end of their 2nd winter, and subsequent annuli are laid down yearly. Lynx trapped in the present study during late January and February often had annuli juxtaposed to the periodontal-cementum interface. Thus deposition of annuli in lynx appears similar to that in bobcats and coyotes. For lynx trapped during January and February, we measured the distances of the most recent annulus from the periodontal-cementum interface. This was used to differentiate between currently growing annuli and those from the previous winter.

Lynx kittens (up to 1 year of age) were easily recognized by their large apical foramina in canine roots as described by Saunders (1963a). Closure of root canals is apparently complete by 14 months of age (van Zyll de Jong 1963).

## RESULTS AND DISCUSSION

### Trends in Snowshoe Hare Populations

Trapper responses to annual hare questionnaires from various regions of Alberta (Fig. 1) were compared. Chi-square contingency tables were used to test for differences in numbers reporting hares scarce, average, or abundant. Since lynx carcasses were not obtained from regions 5 and 6, responses from these regions were excluded from this analysis. Only 1 winter (1972–73) showed a significant difference in trapper responses between regions. During that winter, hares were apparently more abundant in regions 3

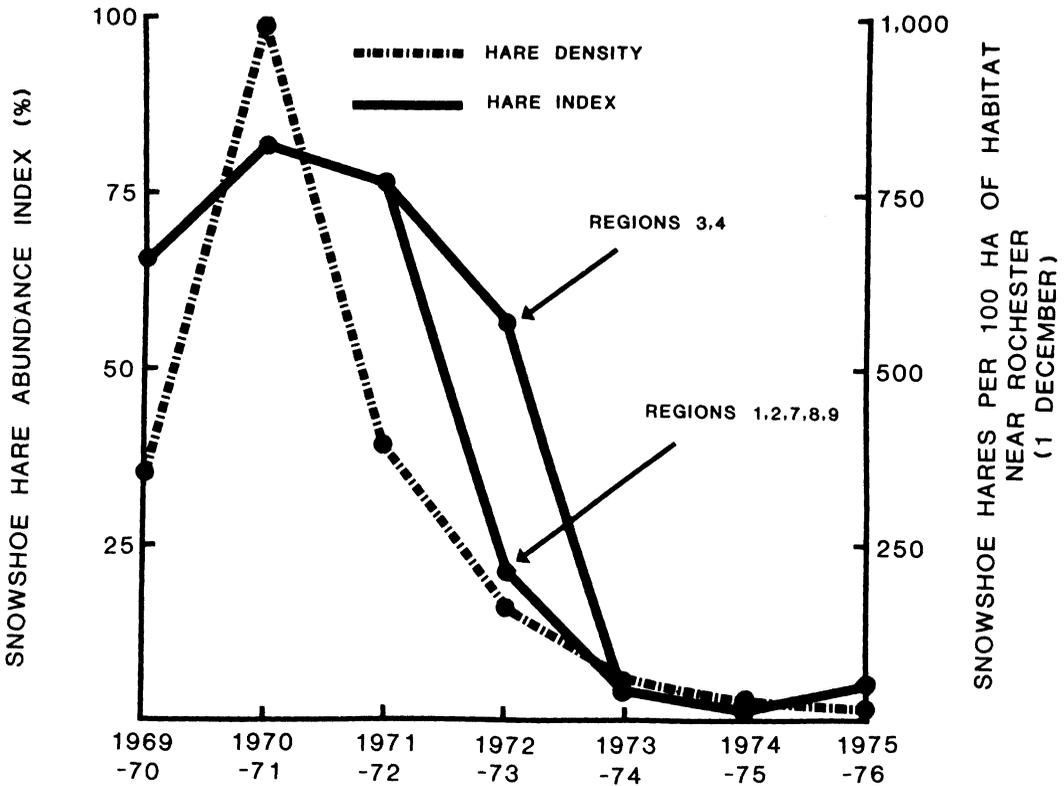


Fig. 3. Snowshoe hare abundance indices calculated from annual questionnaires to registered trappers in Alberta, and hare densities on 4 study areas near Rochester, Alberta (Keith et al. 1977; Keith, unpublished). Indices for regions 3 and 4 during 1972–73 were significantly greater than for regions 1, 2, 7, 8, and 9.

and 4 than elsewhere ( $P < 0.001$ ). When there were no interregional differences in trapper responses for a given winter, questionnaire data were combined to depict the province-wide population.

The hare population in Alberta peaked during winter 1970–71, as did hares on the study areas at Rochester (Fig. 3). During the subsequent 5 years, the abundance index for all regions (Fig. 3) declined from 82 to 5%, and 1 December hare densities at Rochester fell from 990 to 5/100 ha of habitat. Between 1971–72 and 1972–73, the abundance index in regions 3 and 4 declined only from 80 to 57%, whereas in regions 1, 2, 7, 8, and 9 the index declined from 76 to 22%.

Interpreting the relationship between hare densities at Rochester and abundance indices in region 7 (Fig. 2), we classified hares as regionally *abundant* when index values exceeded 50%. This included all regions during 1971–72 and regions 3 and 4 during 1972–73. We interpreted regional indices between 20 and 50% as indicating hares at *intermediate* levels (regions 1, 2, 7, 8, and 9 during 1972–73), and indices below 20% as indicating hares *scarce* (all regions during 1973–74, 1974–75, and 1975–76).

### Trends in Lynx Populations

Fur sales have been commonly used to index population trends of boreal preda-

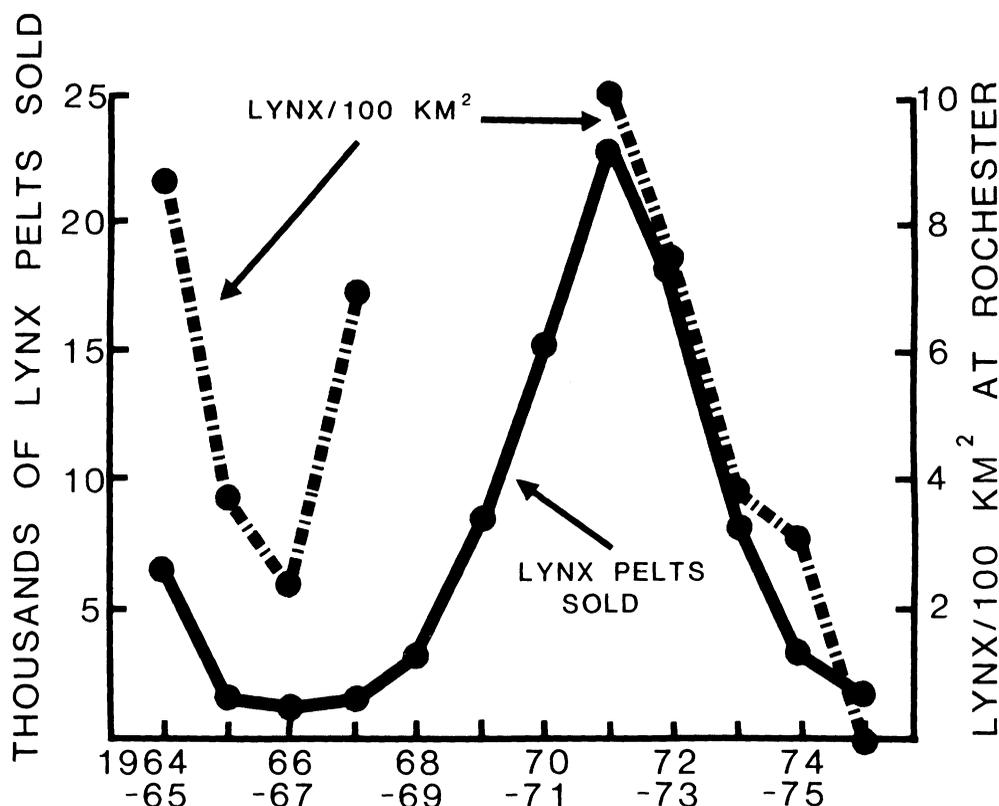


Fig. 4. Number of lynx pelts sold in Alberta (Statistics Canada 1973, 1975, 1977; A. W. Todd, personal communication) and lynx per 100 km<sup>2</sup> on a 130-km<sup>2</sup> study area at Rochester, Alberta (Brand et al. 1976) during 1964–75.

tors (Seton 1911, Hewitt 1921, Keith 1963, Bulmer 1974). The accuracy with which this index depicts amplitudes and timing of population fluctuations often has been questioned due to the potential influence of fluctuations in pelt value on trapping pressure, and the effect of varying levels of prey populations on the vulnerability of predators to trapping (Chitty and Chitty 1941:193, Elton and Nicholson 1942:242–243, de Vos and Matel 1952:743). Fluctuations in numbers of lynx pelts that were trapped and sold in Alberta did, however, parallel changes in lynx numbers on a 130-km<sup>2</sup> study area at Rochester (Fig. 4). Lows occurred in both fur returns and lynx densities during winters 1966–67 and 1975–76, while a peak

occurred in 1971–72 (Brand et al. 1976, Brand unpublished data). Between 1966–67 and 1971–72 the magnitude of change in fur returns was about 20-fold, whereas lynx densities at Rochester changed only 4.3-fold. Between 1971–72 and 1975–76, though, the number of lynx pelts sold in Alberta decreased 12.5-fold, while lynx numbers at Rochester decreased from 13 to 0.

Fur returns for Alberta thus accurately indexed the timing of a peak and 2 lows of the Rochester lynx population, but not its amplitude of fluctuation.

### Food Items of Lynx

Lynx depend on the snowshoe hare during all phases of the hare's 10-year

Table 1. Percent occurrence and percent biomass of food items in 879 stomachs of lynx obtained during winter from trappers in Alberta at 3 levels of hare abundance.

| Prey group                 | % occurrence <sup>a</sup> at different hare population levels |                    |              | % biomass at different hare population levels |              |        |
|----------------------------|---------------------------------------------------------------|--------------------|--------------|-----------------------------------------------|--------------|--------|
|                            | Abundant (72) <sup>b</sup>                                    | Intermediate (114) | Scarce (338) | Abundant                                      | Intermediate | Scarce |
| Snowshoe hare <sup>c</sup> | 90                                                            | 66                 | 35           | 97                                            | 86           | 65     |
| Red and flying squirrel    |                                                               | 9                  | 12           |                                               | 3            | 3      |
| Mice and voles             | 4                                                             | 7                  | 28           | <1                                            | <1           | 1      |
| Other rodents              | 1                                                             | 4                  | 5            | 1                                             | 6            | 8      |
| Carnivores                 | 1                                                             | 3                  | 3            | 1                                             | 2            | 5      |
| Ungulates                  |                                                               | 2                  | 3            |                                               | 2            | 5      |
| Grouse                     |                                                               | 2                  | 6            |                                               | 1            | 3      |
| Other birds                | 3                                                             | 6                  | 6            | 3                                             | 2            | 4      |
| Miscellaneous              |                                                               | 2                  | 4            |                                               | <1           | 5      |

<sup>a</sup> Percent occurrence was calculated as number of occurrences of a species divided by total occurrences of all species.

<sup>b</sup> Number of stomachs excluding those that were empty; total numbers were 186, 228, and 465.

<sup>c</sup> Differences ( $P < 0.001$ ) were found in the percent occurrence of snowshoe hare over 3 levels of hare abundance.

cycle of abundance (Saunders 1963b, van Zyll de Jong 1966, Nellis et al. 1972, Stewart 1973). Brand et al. (1976) described changes in use of hares by lynx, as determined from trailing during 6 winters of varying hare densities. Lynx diets determined from the trapped carcasses also changed with hare densities. Percent occurrence of hare in lynx stomachs decreased ( $P < 0.001$ ) from 90 to 35% between years of hare abundance and scarcity (Table 1). Mice and voles comprised the only prey group whose occurrence increased significantly (from 4 to 28%) as hares became scarce, although utilization of all other food items increased to some extent. The change in percent biomass of hares in the lynx diet was from 97 to 65%. The large increase in percent occurrence of mice and voles was mitigated by their small individual biomass. No 1 alternative prey group predominated as percent biomass of hares decreased.

### Rates of Consumption by Lynx

Brand et al. (1976) reported that the shift by lynx to alternative food sources as the hare population declined at Rochester (1971–72 through 1974–75) did not

completely compensate for the decrease in biomass of hares killed per individual lynx; thus the mean daily consumption rate of individual lynx decreased 37%. We could not directly determine changes in consumption rates by lynx from our trapped sample. However, 3 potential indices of consumption rate (Table 2) were examined:

- (1) The proportion of lynx intestinal tracts that contained food differed over the 3 levels of hare abundance ( $P < 0.01$ ). At intermediate hare population levels, 78% of lynx intestinal tracts contained some food material, compared with 88% during years of both hare abundance and scarcity. This index thus yielded no consistent indication of decreased food intake at lower hare densities. The proportion of stomachs containing food was not considered because of the greater potential influence of baits on apparent ingestion prior to trapping.
- (2) Weight of intestinal contents at time of necropsy differed ( $P < 0.001$ ) between hare population levels. Mean biomass decreased from 45 g during

**Table 2.** Indices to rates of food consumption by lynx in Alberta during winter at 3 different levels of hare abundance. Sample sizes in parentheses.

| Index                                                       | Hare population level |              |             | Probability of differences among levels |
|-------------------------------------------------------------|-----------------------|--------------|-------------|-----------------------------------------|
|                                                             | Abundant              | Intermediate | Scarce      |                                         |
| Percent intestines containing food material                 | 88 (192)              | 78 (236)     | 88 (464)    | <0.01 <sup>a</sup>                      |
| Mean weight of intestinal contents (g)                      | 45 (132)              | 33 (181)     | 31 (428)    | <0.001 <sup>b</sup>                     |
| Mean total live-weight of prey represented in intestine (g) | 1,291 (168)           | 1,205 (185)  | 1,169 (405) | <0.03 <sup>b</sup>                      |

<sup>a</sup> Level of significance determined by chi-square test.  
<sup>b</sup> Levels of significance determined by analysis of variance test.

hare abundance to 31 g during hare scarcity.

(3) By applying live weights of prey species to prey items in lynx intestines, we estimated the total biomass (before digestion) of food in the intestine. This index of biomass consumed also decreased ( $P < 0.03$ ) between hare abundance and scarcity (from 1,290 to 1,170 g), but consumption during intermediate years did not differ from either (Duncan's Test). Complete passage of food through gastrointestinal tracts of domestic cats and bobcats takes 2–4 days (Hoelzel 1930:476, Petrides 1968), although the rate is related to type of food, condition of animal, and degree of digestion (Petrides 1968:28). A. W. Todd, Alberta fur biologist,

reported (personal communication) that trappers generally check lynx sets every 2 or 3 days, and that captured lynx are usually alive. Thus if lynx are in the trap an average of 1 to 1.5 days, food remains in the intestine would represent items eaten 0.5–2.5 days prior to capture.

Two of the above 3 indices applied to food consumption by lynx declined with hare scarcity, as did estimates of food consumption obtained earlier by trailing lynx at Rochester (Brand et al. 1976).

### Fat Reserves of Lynx

We examined the interrelationships between our indices of subcutaneous and renal fat by correlation analysis within categories of sex, age, hare abundance,

**Table 3.** Mean indices to renal and subcutaneous fat deposits for lynx collected from trappers during early (1 Nov–15 Jan) and late (16 Jan–28 Feb) winter at 3 levels of hare abundance. Sample size in parentheses.

| Fat index <sup>a</sup>        | Sex or age | Early winter |              |          | Late winter |              |           |
|-------------------------------|------------|--------------|--------------|----------|-------------|--------------|-----------|
|                               |            | Abundant     | Intermediate | Scarce   | Abundant    | Intermediate | Scarce    |
| Renal fat <sup>b</sup>        | Yearling   | 2.5 (26)     | 3.0 (41)     | 2.8 (51) | 3.2 (52)    | 3.5 (76)     | 2.7 (59)  |
|                               | Adult      | 2.6 (19)     | 3.6 (12)     | 2.9 (93) | 3.6 (33)    | 3.9 (30)     | 2.4 (231) |
| Subcutaneous fat <sup>c</sup> | Male       | 2.6 (28)     | 2.9 (41)     | 2.7 (70) | 3.2 (57)    | 3.4 (79)     | 2.3 (154) |
|                               | Female     | 2.2 (26)     | 2.6 (32)     | 2.6 (88) | 2.8 (53)    | 3.1 (59)     | 2.1 (170) |

<sup>a</sup> Fat indices were evaluated visually on a scale of 1 (none) to 5 (very abundant).  
<sup>b</sup> Renal fat was affected by age ( $P < 0.03$ ), hare abundance ( $P < 0.001$ ), season ( $P < 0.001$ ), and an interaction between hare abundance and season ( $P < 0.001$ ).  
<sup>c</sup> Subcutaneous fat was affected by sex ( $P < 0.001$ ), hare abundance ( $P < 0.001$ ), season ( $P < 0.003$ ), and an interaction between hare abundance and season ( $P < 0.001$ ).

and season (1 Nov–15 Jan and 16 Jan–28 Feb). Correlations between these indices were all positive ( $P < 0.05$ ,  $r$  values ranged from 0.59 to 0.86), suggesting a common relationship to total body fat. Both renal and subcutaneous fat indices showed effects of hare abundance ( $P < 0.001$ ) and season ( $P < 0.004$ ), and an interaction between hare abundance and season ( $P < 0.001$ ). Renal fat was affected by age ( $P < 0.03$ ), while subcutaneous fat was affected by sex ( $P < 0.001$ ).

**Renal Fat Index.**—Renal fat indices among yearlings were consistently less than among adults, except during late winters of hare scarcity (Table 3). Growth in lynx continues through at least 2 years of age (Saunders 1963a, van Zyll de Jong 1963); the lower fat reserves of yearlings may be caused by their energy requirements for growth.

Renal fat indices during early winter were greatest at intermediate hare levels, but were similar during abundant and scarce hare levels, suggesting that renal fat was not related to early-winter hare abundance. Renal fat indices during late winter were also greater when hare populations were intermediate. There was, however, a large decrease in fat indices among both yearlings and adults during late winters of hare scarcity. This would explain the observed statistical interaction between hare abundance and season.

**Subcutaneous Fat Index.**—Subcutaneous fat was consistently greater among males than females (Table 3). Trends in subcutaneous fat were related to hare abundance and season. Greatest index values occurred at intermediate levels of hare abundance, with a marked decrease late in winters of hare scarcity.

It appeared that hare abundance affected only renal and subcutaneous fat during late winter. The decrease in late-

winter fat during years of hare scarcity suggested that a negative energy balance accompanied the reduced consumption rates recorded by us at such times.

### Reproductive Performance of Lynx

Decreases in all assessed reproductive parameters (ovulation rates, pregnancy rates, and litter sizes) occurred between years of hare abundance and scarcity. We believe that these decreases were directly related to nutrition. Nutrition has been shown to play an important role in reproduction of wild mammals (Sadleir 1969). Slower growth rates of young caused by inadequate nutrition can delay the age at which sexual maturity is reached. Among mature females, decreased reproductive output due to malnutrition may be reflected in nonbreeding, reduced ovulation and pregnancy rates, and/or increased prenatal mortality.

**Ovulation Rates.**—Ovulation rates were directly related to hare population levels. Crowe (1975:187) suggested that corpora lutea of previous pregnancies in bobcats are retained throughout life, though those from different breeding seasons can be distinguished by color (Duke 1949, Gashwiler et al. 1961). Among lynx, corpora lutea also appear to persist for more than 1 breeding season (Nellis et al. 1972), but we were unable to distinguish those from different breeding seasons by color. While a direct comparison of ovulation rates in relation to hare abundance was thus impossible among adults, we were able to indirectly assess changes in adult ovulation rates.

When hares were abundant, 61% of 143 yearling female lynx ovulated during their 1st year, as indicated by occurrence of corpora lutea; the mean number of corpora per ovulating female was  $5.1 \pm 0.3$ . We were unable to test the relationship of percent yearlings ovulating to decreas-

Table 4. Mean numbers of corpora lutea<sup>a</sup> among female lynx collected from trappers in Alberta, but including only lynx born during years of hare abundance. Sample sizes in parentheses.

| Age (years) | Mean $\pm$ 95% CI of corpora lutea per female during each reproductive season |                     |                    |                   | Probability of differences among years <sup>b</sup> |
|-------------|-------------------------------------------------------------------------------|---------------------|--------------------|-------------------|-----------------------------------------------------|
|             | 1972                                                                          | 1973                | 1974               | 1975              |                                                     |
| 1           | 5.5 $\pm$ 0.7 (59)                                                            | 4.3 $\pm$ 0.8 (29)  |                    |                   | <0.05                                               |
| 2           | 7.3 $\pm$ 1.6 (25)                                                            | 6.8 $\pm$ 1.2 (43)  | 4.4 $\pm$ 0.8 (18) |                   | <0.025                                              |
| 3           | 9.8 $\pm$ 3.7 (8)                                                             | 11.9 $\pm$ 2.5 (13) | 5.5 $\pm$ 1.1 (28) | 5.6 $\pm$ 3.1 (8) | <0.001                                              |
| 4           | 11.2 $\pm$ 2.2 (4)                                                            | 11.8 $\pm$ 6.2 (5)  | 9.2 $\pm$ 1.9 (13) | 7.6 $\pm$ 2.8 (8) | NS                                                  |

<sup>a</sup> Corpora lutea include luteal bodies of previous pregnancies, as discussed in text.

<sup>b</sup> Levels of probability determined by analysis of variance.

ing hare populations because of small sample sizes. Other lynx studies, however, suggested that the age of attainment of sexual maturity, as indicated by corpora lutea, was influenced by hare abundance. Saunders (1961:54) reported that during hare scarcity in Newfoundland, females did not breed until their 2nd year; while Nava's (1970:88) data from Alaska indicated a significantly higher percentage of yearlings with corpora lutea in areas where hares were abundant (91%) than where hares had begun to decline (83%).

If we assume that a constant percentage of female lynx born during years of hare abundance ovulated during their 1st year, then changes in the mean number of corpora lutea within each adult age class during subsequent years may reflect changes in ovulation rates. Table 4 shows the mean number of corpora lutea for each age-class by reproductive year. Only cohorts born during hare abundance, and thus presumably experiencing similar ovulation rates during their 1st year, are included. The partial accumulation of corpora lutea from different breeding seasons can be seen in the rising trend in mean number with age. For example, during 1972, average numbers of corpora lutea per female increased from 5.5 (yearlings) to 11.2 (4-year-olds). The mean increment in numbers of cor-

pora between successive age classes (2.1) was less than expected if all had been retained over the years; apparently some became indistinguishable with age.

Using separate analyses of variance for each age-class, we tested for year-to-year differences in mean number of corpora lutea per ovulating female born during years of hare abundance. Among yearlings, numbers of corpora lutea decreased ( $P < 0.05$ ) between 1972 (5.5) and 1973 (4.3). In 2 of the 3 adult age-classes, mean numbers of corpora lutea also decreased (Table 4); from 7.3 to 4.4 among 2-year-olds during 1972–74 ( $P < 0.025$ ), and from 9.8 to 5.6 among 3-year-olds during 1972–75 ( $P < 0.001$ ). The observed decrease from 11.2 to 7.6 among 4-year-olds was not statistically significant because sample sizes were small during 1972 and 1973. Such changes in ovulation rates can be caused by changes in the percent females ovulating and/or the number of ovulations per female. Since both pregnancy rates and in utero litter sizes determined by placental scars decreased significantly with decreasing hare abundance (discussed later), we suspect that both factors were involved.

*Pregnancy Rates and Litter Sizes.*—Pregnancy rates of yearling lynx could be determined only during years of hare abundance (Table 5). The rate of 40% among yearlings at such times was less

Table 5. Pregnancy rates and in utero litter sizes of yearling and adult lynx collected from trappers in Alberta according to 3 levels of hare abundance. Sample sizes in parentheses.

| Reproductive parameter                | Hare population level |                |                 | Probability of differences among years |
|---------------------------------------|-----------------------|----------------|-----------------|----------------------------------------|
|                                       | Abundant              | Intermediate   | Scarce          |                                        |
| Pregnancy rate <sup>a</sup>           |                       |                |                 |                                        |
| Yearling                              | * 40% (129)           | 0% (6)         | 0% (3)          | <0.001 <sup>b</sup>                    |
| Adult                                 | { 73% (78)            | 46% (26)       | 33% (100)       |                                        |
| Mean ± 95% CI of in utero litter size |                       |                |                 |                                        |
| Yearling                              | ** { 3.9 ± 0.2 (129)  | 3.9 ± 0.7 (26) | 3.4 ± 0.3 (100) | <0.005 <sup>c</sup>                    |
| Adult                                 | { 4.6 ± 0.4 (78)      |                |                 |                                        |

<sup>a</sup> Percent females with placental scars, as determined from uncleared reproductive tracts.

<sup>b</sup> Probability determined by chi-square test.

<sup>c</sup> Probability determined by analysis of variance.

\* Denotes difference ( $P < 0.001$ ); as determined by chi-square.

\*\* Denotes difference ( $P < 0.025$ ); as determined by analysis of variance.

than the 73% among adults ( $P < 0.001$ ). Adult pregnancy rates decreased ( $P < 0.001$ ) to only 33% in years of hare scarcity.

In utero litter sizes differed ( $P < 0.025$ ) between yearling and adult lynx during years of hare abundance ( $3.9 \pm 0.2$  vs.  $4.6 \pm 0.4$ ) (Table 5); and litter sizes of adults decreased ( $P < 0.005$ ) to  $3.4 \pm 0.3$  as hares became scarce.

## Sex Ratios

Previous studies have shown that sex ratios among trapped lynx often favored males. Van Zyll de Jong (1963:5) reported a significant deviation (29 ♂♂:14 ♀♀) in “unfavorable habitats” (agricultural and settled areas) during 1961–63 in Alberta, and suggested that this was due to greater mobility of yearling males as a result of “high population pressure.” However, the sex ratio (41 ♂♂:25 ♀♀) in a sample from elsewhere in Alberta and the Northwest Territories in these same years was not significantly different from the above ratio or from equality. The overall sex ratio (71 ♂♂:39 ♀♀) differed significantly from 50:50. Stewart (1973:17) found a sex ratio of 21 ♂♂:4 ♀♀ among yearling lynx trapped in Ontario during

1971–72, and Berrie (1974:28) also reported a deviant sex ratio of 231 ♂♂:160 ♀♀ in a trapped sample from Alaska during 1969–70. Such disparities in sex ratios may reflect sex-specific trap biases, as suggested for bobcats in Arkansas (Fritts 1973:46), but actual sex ratios of lynx populations were unknown.

We tested sex ratios among trapped lynx during the present study according to age class (kitten, yearling, adult), level of hare abundance, and season. There was no significant deviation from 50:50 in any of the above 18 tests; the overall sex ratio of 974 lynx was 48 ♂♂:52 ♀♀.

## Lynx Age Distribution

Changes in the age distribution of lynx collected from trappers each winter from 1971–72 through 1975–76 are presented in Table 6. Data from 1972–73 are combined separately for regions 3 and 4 and for regions 1, 2, 7, 8, and 9 because of the interregional differences in hare population levels.

The proportion of kittens in trapped samples decreased from 31% during 1971–72 (sample available from region 3 only) to 18% in regions 3 and 4 during 1972–73. In other regions, where hare

Table 6. Age distributions of lynx carcasses collected from trappers in Alberta from 1971–72 through 1975–76. Sample size is shown in parentheses.

| Age (years)              | 1972–73                      |                          |                                |                  |                  |                 |
|--------------------------|------------------------------|--------------------------|--------------------------------|------------------|------------------|-----------------|
|                          | 1971–72 <sup>a</sup><br>(52) | Regions 3 and 4<br>(180) | Regions 1, 2, 7, 8, 9<br>(223) | 1973–74<br>(284) | 1974–75<br>(202) | 1975–76<br>(32) |
| Kitten                   | 31                           | 18                       | 7                              | <1               |                  |                 |
| Yearling                 | 54                           | 48                       | 67                             | 44               | 1                | 12              |
| 2                        | 6                            | 22                       | 16                             | 41               | 29               | 6               |
| 3                        | 6                            | 7                        | 4                              | 11               | 49               | 44              |
| 4                        | 2                            | 2                        | 2                              | 3                | 13               | 34              |
| 5+                       | 2                            | 3                        | 4                              | 1                | 7                | 3               |
| $\bar{x}$                | 1.6                          | 1.9                      | 1.9                            | 2.3              | 3.5              | 3.6             |
| -----                    |                              |                          |                                |                  |                  |                 |
| Hare abundance index (%) | 77                           | 57                       | 22                             | 5                | 2                | 5               |

<sup>a</sup> Lynx collected during 1971–72 were from region 3.

populations were even lower in 1972–73, only 7% of the lynx carcasses were kittens. During the 3 years of hare scarcity (1973–74 through 1975–76), just 1 kitten appeared in our carcass collections (during 1973–74).

Accompanying this decrease in recruitment was a progressive shift in population age distribution toward older cohorts, e.g., during 1973–74 85% of trapped lynx were yearlings and 2-year-olds; during 1974–75 78% were 2- and 3-year-olds; and during 1975–76 78% were 3- and 4-year-olds. Mean age of trapped lynx thus rose from 1.6 years in 1971–72 to 3.6 years in 1975–76.

Changes in age structure of trapped lynx have been reported in Alaska (Berrie 1974:28), where the proportion of kittens increased from zero (1966–67) to 30% (1969–70) with increasing hare densities. W. H. Koonz (personal communication) found a decrease, as we did, in the proportion of lynx kittens trapped in Manitoba during the last hare decline (40% in 1971–72 to 2% in 1973–74).

Three factors suggested that age distributions of trapped lynx did not accurately

reflect actual population age distributions:

- (1) We compared the kitten:adult ratio among trapped lynx during the population peak of 1971–72 with that of an hypothetical age-stable population after 5 consecutive years of increase. A population with constant age-specific birth and mortality rates will rapidly approach a stable age distribution regardless of whether the population is increasing or decreasing (Lotka 1922). We suspect that when hare populations were increasing during 1966–71, conditions were favorable for high and constant birth rates in lynx. To calculate hypothetical stable age distributions for 1971–72, we combined age-specific natality rates recorded during years of hare abundance with age-specific mortality rates ranging from 20 to 60% annually for kittens and 20 to 50% for adults. Because mortality rates of lynx during cyclic increases are unknown, these mortality rates are those that, under the above reproduc-

Table 7. Estimates of age distributions among lynx populations in Alberta, as determined by adjusting age ratios of trapped lynx to account for under-representation of kittens (see text for explanation). Adjusted sample sizes are shown in parentheses.

| Age (years) | 1972-73       |                       |                             | 1973-74 (301)  | 1974-75 (215)  | 1975-76 (34)   |
|-------------|---------------|-----------------------|-----------------------------|----------------|----------------|----------------|
|             | 1971-72 (106) | Regions 3 and 4 (264) | Regions 1, 2, 7, 8, 9 (370) |                |                |                |
| Kitten      | 66            | 53                    | 22                          | 3 <sup>a</sup> | 3 <sup>a</sup> | 3 <sup>a</sup> |
| Yearling    | 26            | 28                    | 58                          | 43             | 1              | 12             |
| 2           | 3             | 13                    | 14                          | 39             | 28             | 6              |
| 3           | 3             | 4                     | 3                           | 11             | 48             | 42             |
| 4           |               | 1                     | 2                           | 3              | 13             | 33             |
| 5+          | 2             | 1                     | 1                           | 1              | 7              | 3              |
| $\bar{x}$   | 1.0           | 1.3                   | 1.7                         | 2.2            | 3.4            | 3.5            |

<sup>a</sup> Calculated as the mean percent kittens present during 1973-74 and 1974-75, as discussed in text.

tive schedule, resulted in a population increase of 4- to 2-fold over 5 years. Lynx populations at Rochester increased 4.3-fold from 1966-67 to 1971-72 (Brand et al. 1976), while fur-harvest figures changed 20-fold. In all of the above hypothetical populations, stable age distributions were achieved within 5 years; kitten:adult ratios ranged from 40:60 to 64:36. The observed age ratio in the trapped sample during 1971-72 (31:69) was less ( $P < 0.05$ ) than hypothetical age ratios of 45:55 and greater. The percentage of kittens in the 1971-72 trapped sample thus appeared to underestimate the expected by about 20 to 50%.

- (2) Kitten:adult ratios of lynx populations on a 130-km<sup>2</sup> area at Rochester were 7:6 (54% kittens) during 1971-72 and 4:6 (40%) during 1972-73 (Brand et al. 1976). The percentage of kittens in trapped samples (31 and 7%, respectively) in Alberta underestimated the corresponding percentages at Rochester by 43 and 82. During the subsequent 3 years, however, there were no kittens present either in trapped samples or at Rochester. Though this information is limited,

lynx populations at Rochester offered the only unbiased estimates of kitten:adult ratios currently known to us.

- (3) Kittens born during 1974 were not represented in the 1974-75 carcass collection, yet the same cohort comprised 12% of the 1975-76 sample (as yearlings); again suggesting that kittens were underrepresented in trapped samples. A possible explanation for this underrepresentation of kittens is the continued partial dependence on their mother for food during the 1st winter (Saunders 1963c, Brand et al. 1976).

We estimated true age distributions of lynx populations from ratios in the trapped sample. Assuming that mortality rates between the 1st and 2nd winters of life are similar each year to rates among older individuals, the percent yearlings in the carcass collection for a given winter (kittens excluded) should depict the percent kittens during the previous year. We calculated percent kittens from percent yearlings in the following year. We combined 1974-75 and 1975-76 because of the small sample size during 1975-76. Age distributions were then adjusted to

correspond to the estimated percent kittens in lynx populations (Table 7). The adjusted age distributions also showed the progressive shift toward older age-classes, with mean age rising from 1.0 to 3.5 years. The proportion of kittens decreased from an estimated 66 to 3% between years of hare abundance and scarcity.

### Lynx Mortality Rates

We estimated rates of trapping and nontrapping mortality during 1964–67 and 1971–75 from a population model using lynx densities at Rochester, provincial fur-harvest data, and information from the present study on reproduction and population age structure. The model was constructed as follows:

(1) Provincial lynx populations were estimated by extrapolating lynx densities determined by trailing on a 130-km<sup>2</sup> study area at Rochester (Brand et al. 1976) to the 531,000 km<sup>2</sup> of lynx habitat in Alberta. Such habitat included forested areas north and west of 54°N, 114°W. Since most trailing at Rochester was done during February and March, lynx densities there were regarded as depicting spring (post-trapping) populations. We do not know how representative these densities were of province-wide populations. There is, unfortunately, a paucity of information on lynx densities elsewhere with which to compare our estimates. Iurgenson (1955) estimated winter densities of European lynx (*Lynx lynx*) in the Central Zone, USSR, ranging from 1.7 to 5.6/100 km<sup>2</sup> between 1931–32 and 1949–50. This is about ½ the range of densities (2.3–10.0/100 km<sup>2</sup>) reported at Rochester by Brand et al. (1976), but on the other hand the European lynx is

about twice as large as the Canada lynx. Our estimates of lynx populations in Alberta ranged from 12,200 during the spring low in 1967 to 53,100 during the peak in 1972 (Table 8, columns B and G).

(2) Finite rates of reproductive increase (*RI*) among lynx populations during 1972, 1973, and 1974 were calculated from a modified equation for net reproductive rate (Krebs 1972:167) as follows:

$$RI = 1 + \frac{\left[ (P_k \times PR_k \times LS_k) + (P_a \times PR_a \times LS_a) \right]}{2}$$

where *P* refers to the estimated proportion of kittens (*k*) and adults (*a*) in the previous winter's lynx population, *PR* is the age-specific pregnancy rate (percent females pregnant), and *LS* is the mean in utero litter size (determined from placental scars). The proportion of kittens in lynx populations was obtained from our adjusted age distribution (Table 7); a 50:50 sex ratio was assumed. During 1965 and 1966, rates of reproductive increase were assumed to be similar to that in 1974, since hares were scarce during those years. Rates of reproductive increase (Table 8, column C) were then applied to our estimates of provincial lynx populations in spring to calculate population size immediately after births in May (Table 8, column D).

(3) The number of lynx pelts sold in Alberta (Statistics Canada 1973, 1975, 1977; A. W. Todd, personal communication) during the subsequent trapping season was subtracted from spring populations (after births) to obtain a theoretical population estimate for the following spring (before births) (Table 8, column F). The dif-

**Table 8.** Estimates of annual rates of trapping and nontrapping mortality among lynx populations in Alberta during 1964–67 and 1971–75.

|                           | A                                                   | B                                                                            | C                                                 | D                                           | E                                           | F                           | G                                                             | H                                                         | I                                                   |
|---------------------------|-----------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------|---------------------------------------------|-----------------------------|---------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------|
| Biological year (May–May) | Lynx per 100 km <sup>2</sup> Rochester <sup>a</sup> | Estimated lynx population in May (before births) A × 531,000 km <sup>2</sup> | Finite rate of reproductive increase <sup>b</sup> | Lynx population in May (after births) B × C | Total lynx trapped over winter <sup>c</sup> | Remaining lynx <sup>d</sup> | Lynx population in following May (before births) <sup>e</sup> | Non-trapping mortality rate (%) (May–Nov) (F – G)/D × 100 | Trapping mortality rate (%) (Nov–Mar) (F – G) × 100 |
| 1964–65                   |                                                     |                                                                              |                                                   |                                             | 6,495                                       |                             | 45,100                                                        |                                                           | 13                                                  |
| 1965–66                   | 8.5                                                 | 45,100                                                                       | (1.5) <sup>f</sup>                                | 67,650                                      | 1,638                                       | 66,012                      | 20,200                                                        | 68                                                        | 8                                                   |
| 1966–67                   | 3.8                                                 | 20,200                                                                       | (1.5) <sup>f</sup>                                | 30,300                                      | 1,098                                       | 29,202                      | 12,200                                                        | 56                                                        | 8                                                   |
| 1971–72                   |                                                     |                                                                              |                                                   |                                             | 22,776                                      |                             | 53,100                                                        |                                                           | 30                                                  |
| 1972–73                   | 10.0                                                | 53,100                                                                       | 2.4                                               | 127,440                                     | 18,084                                      | 109,356                     | 40,900                                                        | 54                                                        | 31                                                  |
| 1973–74                   | 7.7                                                 | 40,900                                                                       | 1.8                                               | 73,620                                      | 8,056                                       | 65,564                      | 20,200                                                        | 62                                                        | 29                                                  |
| 1974–75                   | 3.8                                                 | 20,200                                                                       | 1.5                                               | 30,300                                      | 3,445                                       | 26,855                      | 16,500                                                        | 34                                                        | 17                                                  |

<sup>a</sup> Data from Brand et al. (1976).<sup>b</sup> See text for calculations of reproductive increase.<sup>c</sup> Data from Statistics Canada (1973, 1975, 1977) and A. W. Todd (personal communication).<sup>d</sup> The theoretical number of lynx present in May if all mortality was due to trapping.<sup>e</sup> Column B of subsequent row.<sup>f</sup> Reproductive increase for 1965 and 1966 was assumed similar to that observed during 1974, since hare population levels were similar.

ference between this theoretical population estimate and the corresponding spring population estimate determined independently from Rochester lynx densities thus equals the number of lynx dying from nontrapping mortality.

- (4) The fall (pretrapping season) lynx population was calculated as the difference between spring (after births) estimates and the number dying from nontrapping mortality. We assumed here that all nontrapping mortality occurred prior to the trapping season. This assumption is supported by the fact that lynx population changes during the decline at Rochester occurred before winter (numbers did not change over winter) (Brand et al. 1976), and that age distributions of trapped lynx (Table 7) indicated that kittens disappeared before winter during years of hare scarcity.
- (5) Rates of nontrapping mortality (Table 8, column H) are expressed as numbers of lynx dying from May to November divided by the May (after

births) population estimate; the trapping mortality rate (Table 8, column I) is the number trapped divided by the fall population estimate.

*Nontrapping Mortality Rates.*—Estimates of nontrapping mortality rates from May to November were similar in 4 of 5 years, ranging from 54 to 68%; during 1974, nontrapping mortality dropped to 34% (Table 8). As previously noted, we assumed that nontrapping mortality occurred prior to the trapping season. There was no consistent relationship between nontrapping mortality and May population size, either before or after births.

We estimated numbers of kittens born each May from rates of reproductive increase and spring population size (Table 8, columns C and D). We then estimated the number of kittens in fall from winter age ratios and fall populations (Tables 7 and 8). This enabled us to calculate May-to-November mortality rates for kittens and adults in 1972, 1973, and 1974 (Table 9). These rates were 65, 95, and 88% for

Table 9. Estimates of nontrapping (May–Nov) mortality rates among kitten and adult lynx in Alberta during 1972–74.

| Year | A<br>N<br>kittens<br>born in<br>May <sup>a</sup> | B<br>N<br>adults<br>present in<br>May <sup>b</sup> | C<br>N<br>kittens<br>present in<br>November <sup>c</sup> | D<br>N<br>adults<br>present in<br>November <sup>d</sup> | Kitten<br>mortality (%)<br>(May–Nov)<br>(A – C)/A | Adult<br>mortality (%)<br>(May–Nov)<br>(B – D)/B |
|------|--------------------------------------------------|----------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------|--------------------------------------------------|
| 1972 | 74,340                                           | 53,100                                             | 26,000                                                   | 33,000                                                  | 65                                                | 38                                               |
| 1973 | 32,720                                           | 40,900                                             | 1,700                                                    | 26,600                                                  | 95                                                | 35                                               |
| 1974 | 10,100                                           | 20,200                                             | 1,200                                                    | 18,700                                                  | 88                                                | 7                                                |

<sup>a</sup> Calculated from Table 8 as  $B \times (C - 1)$ .

<sup>b</sup> Table 8, column B.

<sup>c</sup> Calculated as percent kittens (Table 7) times fall population estimate [D – (F – G); Table 8].

<sup>d</sup> Calculated as percent adults (Table 7) times fall population estimate [D – (F – G); Table 8].

kittens, and 38, 35, and 7% for adults. The consistently high kitten mortality during the cyclic decline, coupled with decreased reproduction, accounted for the sharp drop in recruitment to winter populations; kitten mortality before winter averaged about 3 times adult mortality.

*Trapping Mortality Rates.*—Trapping mortality overwinter 1964–65 through 1966–67 averaged 10% of fall lynx populations (Table 8). During 1973–74 and 1974–75, when population levels were similar to 1965–66 and 1966–67, trapping mortality rates were 2 to 4 times greater (17 and 29%). The price of lynx pelts from Alberta averaged \$44 during 1965–67, but \$101 during 1972–75. Our conversations with trappers indicated that these higher pelt prices increased trapping pressure on lynx. We believe this probably led to the increased rate of harvest noted above.

During 3 years of consistently high pelt prices (1972–75), trapping mortality appeared density-dependent, decreasing from 31% of a fall population of 59,000 (Table 8, columns E and G) to 17% of 20,000.

Because we do not know the extent to which lynx densities at Rochester depicted provincial densities, and hence provincial population estimates, we also calculated minimum and maximum trapping mortality rates for each year by ad-

justing population estimates (Table 8, columns B and G) by 50% upwards and downwards, respectively. Resulting trapping mortality rates ranged from an average of 7 to 20% during 1964–67 and 20 to 42% during 1971–75.

*Interactions Between Trapping and Nontrapping Mortality.*—If trapping and nontrapping mortality are compensatory, we would expect a negative relationship between them. Regression analysis of trapping vs. nontrapping mortality during 1965–67 and 1972–75 showed no significant relationship ( $P = 0.88$ ). During 1965–66 and 1966–67, when trapping mortality was 8%, nontrapping mortality rates (68 and 56%) were similar to those in 1972 and 1973 (Table 8); but trapping mortality in 1972–73 and 1973–74 was about 3 times greater (31 and 29%) than in 1965–66 and 1966–67.

We suspect that trapping pressure on lynx was directly related to pelt price, and within the framework of relatively high pelt price (1973–75) trapping mortality was density-dependent, as previously noted. Multiple regression of trapping mortality rates on mean pelt price and fall population estimates were not significant, but suggestive, because partial correlation coefficients were 0.56 ( $P = 0.15$ ) and 0.66 ( $P = 0.12$ ), respectively. If nontrapping and trapping mortality were unrelated, we might expect that a similar

multiple regression using nontrapping mortality rates would yield smaller partial correlation coefficients. This was the case, with corresponding correlation coefficients being  $-0.58$  and  $0.35$  ( $P = 0.34$  and  $0.58$ ).

These limited data suggest that rates of trapping and nontrapping mortality were not related; hence we suspect that trapping mortality is largely additive to nontrapping mortality.

### MANAGEMENT IMPLICATIONS

It has long been contended that cyclic declines of lynx populations are ultimately caused by cyclic declines of snowshoe hares. They correspond closely in their respective fluctuations, and lynx depend heavily on hares as their major food source (Seton 1911:96–98, Hewitt 1921, Sheldon 1930:329, Elton and Nicholson 1942). We have concluded that the immediate cause of lynx declines is an absence of recruitment of kittens to winter populations together with continued adult mortality.

Caughley (1977:197–198) discussed 2 strategies for harvesting populations in a fluctuating environment: the “mean strategy” and the “tracking strategy.” In the former, the variability of population size is ignored, and the rate of harvest is determined from the average size of the population. In the latter, rates of harvest change directly with rates of population increase ( $r$ ); harvesting is curtailed when  $r$  is negative. Caughley aptly pointed out that when the mean periodicity of fluctuations exceeds 5 years, a tracking strategy is the only workable one. A tracking strategy is thus applicable to long-term management of lynx populations, where recruitment is absent or negligible for a period of 3 or 4 years during an 8- to 11-year cycle of abundance.

We believe that the predictability of

the following demographic events in the 10-year cycle of lynx populations provides a simple index to their status, and can be used as a sound basis for management decisions: (1) lynx populations and fur harvests reach a cyclic peak 1–2 years after cyclic peaks of snowshoe hares, and (2) recruitment of kittens to winter populations decreases dramatically 2 years after the peak in lynx fur harvest, and remains near zero during the next 3–4 years. Caughley’s tracking strategy would entail curtailment of lynx trapping during these 3–4 years.

We investigated the long-term effect of a 3-year curtailment of lynx trapping on subsequent population levels and harvests using 2 hypothetical models. Both followed lynx populations from 1973–74 to the next projected population peak. In Model A, trapping mortality continued as described below; in Model B, trapping was discontinued during 1973–74 through 1975–76, i.e., when recruitment was near zero.

In both cases we assumed that minimum populations were reached in spring 1976, and subsequently increased for 5 years to peak levels in 1981. The finite rate of reproductive increase ( $RI$ ) during the population increase was taken as 2.4 yearly, i.e., the rate recorded during hare abundance (Table 8). Because lynx numbers at Rochester increased 4.3-fold during 1966–67 to 1971–72, the annual finite rate of population increase ( $\lambda$ ) was 1.34. We assumed that  $\lambda$  was constant and similar in each model population during the 5 increase years. The annual mortality rate ( $q_x$ ) was thus calculated as:

$$q_x = [1 - (\lambda/RI)] \times 100,$$

or 44%.

We do not know the relative importance of trapping vs. nontrapping mortal-

Table 10. Population estimates and harvest data for lynx in Alberta during 1973–74 to 1980–81 as calculated from 2 hypothetical models. In Model A, trapping continued over the 8-year period; in Model B, trapping ceased during the 1st 3 years when recruitment to the population was near zero. See text for explanation of assumptions and calculations.

| Model | May 1973 population estimate <sup>a</sup> | May 1976 population estimate | N lynx trapped (1973–76) | Projected May 1981 population estimate <sup>b</sup> | Projected N lynx trapped (1977–81) | Total N lynx trapped (1973–81) |
|-------|-------------------------------------------|------------------------------|--------------------------|-----------------------------------------------------|------------------------------------|--------------------------------|
| A     | 58,984                                    | 13,600                       | 13,332 <sup>c</sup>      | 58,760                                              | 28,900                             | 42,232                         |
| B     | 58,984                                    | 27,700                       | 0                        | 119,675                                             | 58,900                             | 58,900                         |

<sup>a</sup> Data from Table 8.

<sup>b</sup> We assumed that lynx populations reach a cyclic low in 1976, then increased 4.3-fold over the subsequent 5 years to a peak in 1981.

<sup>c</sup> Data from Statistics Canada (1975, 1977).

ity during the lynx population increase. However, nontrapping mortality during 1972–75 averaged 50%, or 79% of total mortality (Table 8). We thus assumed that nontrapping mortality during the increase likewise comprised 79% of total mortality, or 35% annually.

By fixing rates of increase and nontrapping mortality, trapping mortality was also constant by necessity. Trapping mortality during the cyclic decline of 1972–75 appeared density-dependent within the framework of relatively high pelt prices, though this relationship is yet uncertain. During the cyclic increase, though, we do not have evidence that trapping mortality was density-dependent. These above assumptions provide a crude method by which we can predict long-term fur harvests and population trends.

*Model A.*—Our estimate of the Alberta lynx population in spring 1975 was 16,500 (Table 8). The assumption that rates of reproductive increase and mortality in 1975–76 were similar to those in 1974–75 gave a population in spring 1976 of 13,600 (Table 10). By thereafter applying an annual finite rate of increase of 1.34 (given above) we arrived at a population in spring 1981 of 58,760.

We calculated that during 1973–81 42,232 lynx would be trapped in Alberta (Table 10). This figure was based on ac-

tual harvest data from 1973–74 through 1975–76 (years of population decline), and estimated harvests from 1976–77 through 1980–81 (years of population increase). The latter were obtained by (1) subtracting a 35% nontrapping mortality rate from postbirth spring populations to estimate fall populations, and (2) determining the difference between fall and subsequent prebirth spring populations. Trapping mortality, as calculated above, amounted to 14% of fall numbers during the 5 increase years.

*Model B.*—Since trapping appeared additive to nontrapping mortality of lynx during their decline, we used only nontrapping mortality rates (Table 8) in calculating the numerical decrease from 1973 to 1976 in the absence of trapping. The resulting population estimate for spring 1976 was 27,700 (Table 10), or about twice the 13,600 predicted by Model A. If, on the other hand, trapping mortality were partly compensatory, data from Table 8 could be similarly used to predict other hypothetical spring populations. For example, if trapping mortality were 50% compensatory (50% of trapped lynx would have otherwise died during winter from nontrapping mortality), the 1976 population would be 19,800, approximately 1.5 times that given by Model A.

During the subsequent 5 years of in-

crease, the Model B population attained a peak of 119,675 compared to 58,760 for Model A. We assumed that below this level, social restriction of population size did not occur. Population regulation through social restrictions has been reported in the mountain lion (*Felis concolor*) (Hornocker 1969:464, Seidensticker et al. 1973:59) and wolf (*Canis lupus*) (Mech 1970:320), but these species rely on relatively stationary prey populations. We (Keith 1974:35, Brand et al. 1976:428) contend that certain predators, notably the arctic fox and lynx, which rely heavily on fluctuating prey populations do not exhibit such social restrictions to population size in the context of densities achieved in the field. Thus, while the relative size of the 2 hypothetical populations was the same in 1981 as in 1976 (2:1), the difference between them by 1981 was 60,100.

Under Model-B management, the estimated number of lynx trapped during the 5 increase years was 58,900; this compares to 28,900 for Model A. Total numbers of lynx trapped during 1973–81 would be 58,900 and 42,200, respectively; a net gain of about 16,700 for Model B even though it would eliminate trapping for 3 years during the population decline.

These models are crude, but they illustrate how, by curtailing lynx trapping during 3 years of the population decline, long-term lynx harvests can be increased. We thus suggest that lynx population trends be monitored through examination of annual fur harvests. During the 2nd winter after the fur-harvest peak, recruitment of kittens likely will drop sharply. Lynx trapping should then be curtailed for 3 or 4 years, i.e., until snowshoe hare populations recover sufficiently from their cyclic low to again permit lynx recruitment. Regional differences in

phases of the 10-year cycle would perhaps require management programs to be implemented on a regional rather than a state- or province-wide basis.

## CONCLUSION

Holling (1959) described the numerical responses of predators to changing prey densities as stemming from dietary responses. Brand et al. (1976) found that lynx responded to changing hare densities at Rochester by shifting from hares to alternative food sources, and, more importantly, by varying food consumption rates. The present study indicated that similar dietary responses occurred among lynx throughout Alberta during the decline of 1971–76.

Indices of lynx body fat increased significantly between early and late winter when snowshoe hares were at intermediate or abundant levels, but decreased significantly during years of hare scarcity, suggesting that lynx experienced a negative energy balance. Brand et al. (1976) concluded that during years of hare scarcity, average consumption by lynx at Rochester dropped about 20% below that required to maintain body weight.

Lynx numbers at Rochester did not change overwinter during the population decline of 1972–75 (Brand et al. 1976). Since Rochester lynx populations were largely untrapped, it appears that disappearance of both kittens and adults occurred between the spring and winter. Nontrapping mortality factors of lynx are little known, but nutritionally stressed lynx, especially kittens, are probably more susceptible to mortality from disease, predation, and/or cannibalism as well as outright starvation. In addition, sibling aggression resulting from competition for food might occur among kittens, as reported among arctic fox pups (MacPherson 1969). Mortality of kittens

during hare scarcity occurs during summer and early fall when they are entirely dependent on their mother for food. Brand et al. (1976) reported from winter trailing at Rochester that kittens were present at only 7 of the 17 sites where kills were made by females with kittens. We do not know if the female shared the kill with her young in these cases, but we suspect she fed herself 1st.

Starving lynx are also probably more susceptible to human-related mortality during hare scarcity. Increased lynx movement in search of food may increase lynx-human contacts, especially in agricultural and other settled areas where alternative food may be more abundant. Undoubtedly, starving lynx are also attracted to baited sets. Outright starvation of lynx during contemporary lows in hare populations is likely less common than during pristine times.

Between years of hare abundance and scarcity, finite rates of reproductive increase among lynx decreased 38% (from 2.4 to 1.5, Table 8). This decrease, caused by reduced litter sizes and pregnancy rates, was partly responsible for the lack of recruitment to winter populations in decline years. Postpartum mortality of kittens before winter, however, removed 65 to 95% of the kittens born during the lynx population decline, and appeared mainly responsible for the lack of recruitment, as suggested by Nellis et al. (1972).

Mortality rates from trapping varied with pelt prices, and within the framework of consistently high prices, also appeared density-dependent. There was, however, no apparent relationship between trapping and nontrapping mortality. In the absence of trapping, lynx populations would hypothetically continue to decline during years of hare scarcity, but to levels above those of continuously trapped populations. This higher level

during the cyclic low would result in a greater overall harvest during the subsequent increase of the lynx population, and higher numbers at the peak.

Major increases in lynx pelt prices during the past 10 years have apparently increased trapping pressure; we have calculated that a 2- to 4-fold increase in rates of trapping coincided with a 2- to 3-fold increase in mean pelt value. Because trapping mortality appears additive to nontrapping mortality, intensive trapping could result in local extirpation of lynx during years when recruitment is absent. De Vos and Matel (1952) suggest that overtrapping of lynx was largely responsible for successively lower lynx population peaks in 1925–26, 1935–36, and 1944–45 across Canada. The geographical range of lynx was also decreasing during this interval when compared with the range reported by Seton (1929:157). If lynx pelt price continues at its recent high level, it is hoped that such a decline does not again occur.

#### LITERATURE CITED

- BAILEY, J. A. 1968. A weight-length relationship for evaluating physical condition of cottontails. *J. Wildl. Manage.* 32:835–841.
- BANDY, P. J., I. M. COWAN, AND W. D. KITTS. 1956. A method of the assessment of the nutritional status of wild ungulates. *Can. J. Zool.* 34:48–52.
- , W. D. KITTS, A. J. WOOD, AND I. M. COWAN. 1957. The effect of age and the plane of nutrition on the blood chemistry of the Columbian black-tailed deer (*Odocoileus hemionus columbianus*). B. Blood glucose, non-protein nitrogen, total plasma protein, plasma albumin, globulin, and fibrinogen. *Can. J. Zool.* 35:283–289.
- BERRIE, P. M. 1974. Ecology and status of the lynx in interior Alaska. Pages 4–41 in R. L. Eaton, ed. *The world's cats*, Vol. I. World Wildlife Safari, Winston, Oregon.
- BRAND, C. J., L. B. KEITH, AND C. A. FISCHER. 1976. Lynx responses to changing showshoe hare densities in central Alberta. *J. Wildl. Manage.* 40:416–428.
- BULMER, M. G. 1974. A statistical analysis of the

- 10-year cycle in Canada. *J. Anim. Ecol.* 43:701-718.
- CAUGHLEY, G. 1971. Demography, fat reserves and body size of a population of red deer (*Cervus elaphus*) in New Zealand. *Mammalia* 35:369-383.
- . 1977. Analysis of vertebrate populations. John Wiley & Sons, London. 234pp.
- CHEATUM, E. L. 1949. Bone marrow as an index of malnutrition in deer. *N.Y. Conserv.* 3(5): 19-22.
- CHITTY, D., AND H. CHITTY. 1941. Canadian arctic wild life enquiry, 1939-40. *J. Anim. Ecol.* 10:184-203.
- CROWE, D. M. 1972. The presence of annuli in bobcat tooth cementum layers. *J. Wildl. Manage.* 36:1330-1332.
- . 1975. Aspects of ageing, growth, and reproduction of bobcats from Wyoming. *J. Mammal.* 56:177-198.
- DE VOS, A., AND S. E. MATEL. 1952. The status of the lynx in Canada, 1920-1952. *J. For.* 50:742-745.
- DUKE, K. L. 1949. Some notes on the histology of the ovary of the bobcat with special reference to the corpora lutea. *Anat. Rec.* 103:11-132.
- ELTON, C., AND M. NICHOLSON. 1942. The ten-year cycle in numbers of the lynx in Canada. *J. Anim. Ecol.* 11:215-244.
- ENGLUND, J. 1970. Some aspects of reproduction and mortality rates in Swedish foxes (*Vulpes vulpes*), 1961-63 and 1966-69. *Viltrevy* 8:1-82.
- FRITTS, S. H. 1973. Age, food habits, and reproduction of the bobcat (*Lynx rufus*) in Arkansas. M.S. Thesis. Univ. of Arkansas, Fayetteville. 80pp.
- FLUX, J. E. C. 1970. Life history of the mountain hare (*Lepus timidus scoticus*) in North-east Scotland. *J. Zool.* 161:75-123.
- . 1971. Validity of the kidney fat index for estimating the condition of hares: a discussion. *N.Z. J. Sci.* 14:238-244.
- GASHWILER, J. S., W. L. ROBINETTE, AND O. W. MORRIS. 1961. Breeding habits of bobcats in Utah. *J. Mammal.* 42:76-84.
- HEWITT, C. G. 1921. The conservation of wild life in Canada. Scribner's, New York. 344pp.
- HOELZEL, F. 1930. The rate of passage of inert materials through the digestive tract. *Am. J. Physiol.* 92:466-497.
- HOLLING, C. S. 1959. The components of predation as revealed by a study of small-mammal predation of the European pine sawfly. *Can. Entomol.* 91:293-320.
- HORNOCKER, M. G. 1969. Winter territoriality in mountain lions. *J. Wildl. Manage.* 33:457-464.
- IURGENSON, P. B. 1955. Ecology of the lynx in forests of the Central Zone of the USSR. *Zool. J.* 34:609-620.
- KEITH, L. B. 1963. Wildlife's ten-year cycle. University of Wisconsin Press, Madison. 201pp.
- . 1974. Some features of population dynamics in mammals. *Proc. Int. Congr. Game Biol.* 11:17-58.
- , A. W. TODD, C. J. BRAND, R. S. ADAMCIK, AND D. H. RUSCH. 1977. An analysis of predation during a cyclic fluctuation of snowshoe hares. *Proc. Int. Congr. Game Biol.* 13:151-175.
- KLEVEZAL, G. A., AND S. E. KLEINENBERG. 1969. Age determination of mammals from annual layers in teeth and bones. Israeli Program for Scientific Translations. 128pp. Transl. from Acad. of Sci. of USSR.
- KREBS, C. J. 1972. Ecology: the experimental analysis of distribution and abundance. Harper & Row Publishers, Inc. New York. 694pp.
- LAYNE, J. N., AND W. H. MCKEON. 1956. Some aspects of red fox and gray fox reproduction in New York. *N.Y. Fish Game J.* 3:44-74.
- LINHART, S. B., AND F. F. KNOWLTON. 1967. Determining age of coyotes by tooth cementum layers. *J. Wildl. Manage.* 31:362-365.
- LOTKA, A. J. 1922. The stability of the normal age distribution. *Proc. Zool. Soc. London* 128:347-348.
- MCEWEN, E. H., AND A. SCOTT. 1957. Pigmented areas in the uterus of the arctic fox *Alopex lagopus inuitus* Merriam. *Proc. Zool. Soc. London* 128:347-348.
- MACPHERSON, A. H. 1969. The dynamics of Canadian arctic fox populations. *Can. Wildl. Serv. Rep. Ser.* 8. 52pp.
- MECH, L. D. 1970. The wolf: the ecology of behavior of an endangered species. *Nat. Hist. Press, Doubleday, New York.* 384pp.
- MOSSMAN, H. W., AND K. L. DUKE. 1973. Comparative morphology of the mammalian ovary. Univ. of Wisconsin Press, Madison. 461pp.
- NAVA, J. A., JR. 1970. The reproductive biology of the Alaska lynx (*Lynx canadensis*). M.S. Thesis. Univ. of Alaska, Fairbanks. 141pp.
- NELIS, C. H. 1975. Ecology of coyotes and lynxes in central Alberta. Ph.D. Thesis. Univ. of Wisconsin, Madison. 127pp.
- , S. P. WETMORE, AND L. B. KEITH. 1972. Lynx-prey interactions in central Alberta. *J. Wildl. Manage.* 36:320-329.
- PETRIDES, G. A. 1968. The use of 51-Chromium in the determination of energy-flow and other digestive characteristics in animals. Pages 25-31 in *Proc. Symp. Recent Adv. Trop. Ecol.*
- RANSOM, A. B. 1965. Kidney and marrow fat as indicators of white-tailed deer condition. *J. Wildl. Manage.* 29:397-398.
- RINEY, T. 1955. Evaluating condition in free ranging red deer with special reference to New Zealand. *N.Z. J. Sci. Technol.* 36:429-463.
- SADLEIR, R. M. F. S. 1969. The role of nutrition in the reproduction of wild mammals. *J. Reprod. Fert. Suppl.* 6:39-48.
- SAUNDERS, J. K., JR. 1961. The biology of the Newfoundland lynx (*Lynx canadensis subsolanus*

- Bangs). Ph.D. Thesis. Cornell Univ., Ithaca, N.Y. 109pp.
- . 1963a. Physical characteristics of the Newfoundland lynx. *J. Mammal.* 45:36–47.
- . 1963b. Food habits of the lynx in Newfoundland. *J. Wildl. Manage.* 27:384–390.
- . 1963c. Movements and activities of the lynx in Newfoundland. *J. Wildl. Manage.* 27:390–400.
- SEIDENSTICKER, J. C. IV, M. G. HORNOCKER, W. V. WILES, AND J. P. MESSICK. 1973. Mountain lion social organization in the Idaho Primitive Area. *Wildl. Monogr.* 35:1–60.
- SETON, E. T. 1911. *The arctic prairies*. Charles Scribner's Sons, N.Y. 415pp.
- . 1929. *Lives of game animals*, Vol. I. Doubleday, Doran & Co., N.Y. 337pp.
- SHELDON, C. 1930. *The wilderness of Denali*. Charles Scribner's Sons, N.Y. 412pp.
- SMITH, N. S. 1970. Appraisal of condition estimation methods for East African ungulates. *E. Afr. Wildl. J.* 8:123–129.
- STATISTICS CANADA. 1973. Fur production season 1971–72. Information Canada, Ottawa. 15pp.
- . 1975. Fur production season 1973–74. Information Canada, Ottawa. 15pp.
- . 1977. Fur production season 1975–76. Information Canada, Ottawa.
- STEWART, R. R. 1973. Age distributions, reproductive biology and food habits of Canada lynx (*Lynx canadensis* Kerr) in Ontario. M.S. Thesis. Univ. of Guelph, Ontario. 62pp.
- VAN ZYLL DE JONG, C. G. 1963. The biology of the lynx, *Felis (Lynx) canadensis* (Kerr) in Alberta and the Mackenzie District, N.W.T. M.S. Thesis. Univ. of Alberta, Edmonton. 76pp.
- . 1966. Food habits of the lynx in Alberta and the Mackenzie District, N.W.T. *Can. Field-Nat.* 80:18–23.
- WILSON, D. E., AND S. M. HIRST. 1977. Ecology and factors limiting roan and sable antelope populations in South Africa. *Wildl. Monogr.* 54:1–111.

*Received 20 April 1978.*

*Accepted 17 March 1979.*



United States Department of the Interior  
U.S. Fish and Wildlife Service

Idaho Fish and Wildlife Office

1387 S. Vinnell Way, Room 368

Boise, Idaho 83709

Telephone (208) 378-5243

<http://www.fws.gov/idaho>



Western Watersheds Project  
Travis Bruner, J.D., Executive Director  
P.O. Box 1770  
Hailey, ID 83333

APR 17 2014

Dear Mr. Bruner:

This letter is in reply to your letter dated April 7, 2014. You requested a written response regarding our response to your Western Watersheds Project (WWP) letter dated February 1, 2012. The statements you refer to were not part of the letter was signed, dated, and sent to WWP. For the record, the responsive letter was dated March 12, 2012 and signed by Russell R. Holder for Brian T. Kelly. The March letter is attached for your review.

Thank you for the opportunity to clarify the U.S. Fish and Wildlife Service's position in this matter.

Sincerely,

  
Michael Carrier  
State Supervisor

Attachment: FWS letter dated March 12, 2012



United States Department of the Interior  
U. S. Fish and Wildlife Service

Idaho Fish and Wildlife Office

1387 S. Vinnell Way, Room 368

Boise, Idaho 83709

Telephone (208) 378-5243

<http://www.fws.gov/idaho>



John Marvel  
Western Watersheds Project  
Box 1770  
Hailey, Idaho 83333

MAR 12 2012

Subject: Incidental Lynx Trapping on Salmon-Challis National Forest  
In Reply Refer to: 01EIFW00-2012-TA-0156 Internal Use: COM-241a

Dear Mr. Marvel,

The U.S. Fish and Wildlife Service (Service) appreciates your interest in the recent incidental trapping of a lynx on lands administered by the Salmon-Challis National Forest (Forest). Lands contained within the boundaries of the Forest have not met the definition of lynx occupancy. We would not expect the Forest nor Idaho Department of Fish and Game to seek Endangered Species Act (ESA) compliance for a species assumed to be absent from an area and where critical habitat has not been identified.

Thank you for your interest in the conservation of lynx in Idaho. It should be noted that the lynx was released unharmed by IDFG, and valuable biological information was collected. If you would like further information please contact Russ Holder, Assistant State Supervisor at (208) 378-5384.

Sincerely,

*for*

Brian T. Kelly  
State Supervisor

cc: IDFG, Boise (Moore, Gould)



**Western  
Watersheds  
Project**

**Hailey Office**

PO Box 1770

Hailey, ID 83333

tel: (208) 788-2290

fax: (208) 475-4702

email: [wwp@westernwatersheds.org](mailto:wwp@westernwatersheds.org)

web site: [www.westernwatersheds.org](http://www.westernwatersheds.org)

*Working to protect and restore Western Watersheds and Wildlife*

April 7, 2014

State Supervisor Michael Carrier  
Idaho Fish and Wildlife Service  
1387 S. Vinnell Way, Suite 368  
Boise, ID 83709

Dear Supervisor Carrier:

This letter follows previous communication between Western Watersheds Project (“WWP”) and the U.S. Fish and Wildlife Service (“USFWS”) in regard to lynx trapping in the State of Idaho.

On February 1, 2012, WWP sent State Supervisor Kelly a letter asking whether Idaho Fish and Game (“IDFG”) had consulted with the USFWS in regard to the potential impact of Idaho trapping regulations on lynx, a species listed as threatened under the Endangered Species Act. The letter made specific mention of a lynx trapping incident on the Salmon-Challis National Forest in January of 2012.<sup>1</sup>

Later in February,<sup>2</sup> Supervisor Kelly responded, stating that prior to the trapping incident, the Salmon-Challis National Forest did not contain “occupied” lynx habitat. Supervisor Kelly’s letter went on to explain that USFWS would follow up with IDFG “to determine the full extent of trapping and the potential impact on lynx due to permitted recreational trapping.”

More than two years later, WWP has received no indication that the issue of lynx trapping has been addressed by USFWS. IDFG has not developed a conservation plan or received an incidental take permit from USFWS. Unfortunately, the threat posed to lynx by incidental take from Idaho trapping remains unaddressed. During the last two years, bobcat trappers in Idaho have unintentionally trapped at least three lynx.

At your earliest convenience, please provide a written response to this letter, describing any action USFWS has taken or plans to take in regard to lynx trapping in Idaho.

Sincerely,

Travis Bruner, J.D.  
Executive Director

<sup>1</sup> See <http://fishandgame.idaho.gov/public/media/viewNewsRelease.cfm?newsID=6161>.

<sup>2</sup> The letter was not dated.

# USFWS Lynx Trapping Letter 4.7.14.pdf



Faint header text, possibly including recipient information and date.

The first paragraph of the letter, containing introductory text.

The second paragraph of the letter.

The third paragraph of the letter.

The fourth paragraph of the letter.

The fifth paragraph of the letter.

The sixth paragraph of the letter.

The seventh paragraph of the letter.

The eighth paragraph of the letter.

The ninth paragraph of the letter.



Holder, Russ &lt;russ\_holder@fws.gov&gt;

---

**Fwd: Lynx Trapping Letter**

5 messages

**Carrier, Michael** <michael\_carrier@fws.gov>

Mon, Apr 7, 2014 at 3:57 PM

To: Russ Holder &lt;russ\_holder@fws.gov&gt;

Cc: Dennis Mackey &lt;dennis\_mackey@fws.gov&gt;, Theresa Rabot &lt;theresa\_rabot@fws.gov&gt;, Mark Bagdovitz &lt;mark\_bagdovitz@fws.gov&gt;, Marilet Zablan &lt;marilet\_zablan@fws.gov&gt;, Hilary Cooley &lt;hilary\_cooley@fws.gov&gt;

Russ,

Would appreciate your advice on a response or a draft reply. Because Western Watersheds and Center for Biological Diversity filed a sixty day notice or intent to sue over this issue with IDFG today, we will want our solicitor to review any response, written or verbal.

Thanks

Mike

——— Forwarded message ———

From: **Travis Bruner** <travis@westernwatersheds.org>

Date: Mon, Apr 7, 2014 at 3:07 PM

Subject: Lynx Trapping Letter

To: Michael Carrier &lt;michael\_carrier@fws.gov&gt;

Dear Mike:

Please find attached a letter alerting the U.S. Fish and Wildlife Service to the need to address lynx trapping in Idaho. I also sent this letter today via postal mail.

I look forward to your written response.

Best Regards,  
Travis

**Travis Bruner**  
**Executive Director**

PO Box 1770

Hailey, ID 83333

Office: (208) 788-2290

Fax: (208) 475-4702

travis@westernwatersheds.org

www.westernwatersheds.org

Michael Carrier, State Supervisor  
Idaho Office, U.S. Fish and Wildlife Service  
1387 S. Vinnell Way, Suite 368  
Boise, Idaho 83709  
(208) 378-5243  
(503) 551-6340 (cell)

---

 **USFWS Lynx Trapping Letter 4.7.14.pdf**  
688K

---

**Holder, Russ** <russ\_holder@fws.gov>  
To: Eric Nagle <Eric.Nagle@sol.doi.gov>

Tue, Apr 8, 2014 at 8:59 AM

Eric, If you would be the attorney on this, we should have a conversation. The FWS letter referred to in the WWP letter was a draft - don't know how WWP got it. Would you be available at 3:30pm MT/2:30pm PT?  
...Russ

[Quoted text hidden]

—  
*Russ Holder, Assistant State Supervisor*  
*U.S. Fish and Wildlife Service*  
*Idaho Fish and Wildlife Office*  
*1387 S. Vinnell Way, Room 368*  
*Boise, ID 83709*  
*desk 208-378-5384*  
*Fax 208-378-5262*

---

 **USFWS Lynx Trapping Letter 4.7.14.pdf**  
688K

---

**Nagle, Eric** <eric.nagle@sol.doi.gov>  
To: "Holder, Russ" <russ\_holder@fws.gov>

Tue, Apr 8, 2014 at 9:39 AM

Yes, I'm assigned to this, and I can talk then.  
[Quoted text hidden]

—  
Eric W. Nagle  
Senior Attorney  
Office of the Solicitor, Pacific Northwest Region  
U.S. Department of the Interior  
805 SW Broadway, Suite 600  
Portland, OR 97205  
503-231-2141, fax 503-231-2166

---

**Holder, Russ** <russ\_holder@fws.gov>  
To: "Nagle, Eric" <eric.nagle@sol.doi.gov>

Tue, Apr 15, 2014 at 11:30 AM

Eric, Draft letter attached for your review as per our conversation last week. Would you like to be cc:ed on the signed letter? ...Russ  
[Quoted text hidden]

---

 **WWP\_Bruner\_Itr 041514\_2.docx**

138K

---

**Nagle, Eric** <eric.nagle@sol.doi.gov>  
To: "Holder, Russ" <russ\_holder@fws.gov>

Tue, Apr 15, 2014 at 11:43 AM

Here are some suggested edits.

[Quoted text hidden]



**WWP\_Bruner\_itr 041514\_2.docx**

138K



Holder, Russ &lt;russ\_holder@fws.gov&gt;

---

**REVIEW request**

2 messages

---

**Holder, Russ** <russ\_holder@fws.gov>  
To: Eric Nagle <Eric.Nagle@sol.doi.gov>

Thu, Apr 17, 2014 at 9:56 AM

Eric, I incorporated your edits and gave to Mike Carrier for signature BUT he had edits which I've incorporated into the attached letter. I wanted to ensure you saw what we were planning to send before I give it back to Mike for his signature. Are you ok with the way the letter is now written? Thanks. ...Russ

—  
*Russ Holder, Assistant State Supervisor  
U.S. Fish and Wildlife Service  
Idaho Fish and Wildlife Office  
1387 S. Vinnell Way, Room 368  
Boise, ID 83709  
desk 208-378-5384  
Fax 208-378-5262*

---

 **WWP\_Bruner\_ltr 041514\_final.docx**  
138K

---

**Nagle, Eric** <eric.nagle@sol.doi.gov>  
To: "Holder, Russ" <russ\_holder@fws.gov>

Thu, Apr 17, 2014 at 9:58 AM

Looks fine.  
[Quoted text hidden]

—  
Eric W. Nagle  
Senior Attomey  
Office of the Solicitor, Pacific Northwest Region  
U.S. Department of the Interior  
805 SW Broadway, Suite 600  
Portland, OR 97205  
503-231-2141, fax 503-231-2166



United States Department of the Interior  
U.S. Fish and Wildlife Service

Idaho Fish and Wildlife Office

1387 S. Vinnell Way, Room 368

Boise, Idaho 83709

Telephone (208) 378-5243

<http://www.fws.gov/idaho>



*Mike Carrier  
edits  
4/16/14*

Western Watersheds Project  
Travis Bruner, J.D., Executive Director  
P.O. Box 1770  
Hailey, ID 83333

Dear Mr. Bruner:

This letter is in reply to your letter dated April 7, 2014. You requested a written response regarding ~~what you claim~~ was our response to your Western Watersheds Project (WWP) letter dated February 1, 2012. The statements you refer to were ~~part of a draft work~~ <sup>at all</sup> ~~not a part of the~~ *letter* product which was never signed, dated, or sent to WWP. For the record, the responsive letter which was dated March 12, 2012 and signed by Russell R. Holder for Brian T. Kelly is attached for your review.

*The attached letter*  
Thank you for the opportunity to clarify the U.S. Fish and Wildlife Service's position in this matter.  
Sincerely,

Michael Carrier  
State Supervisor

Attachment: FWS letter dated March 12, 2012



United States Department of the Interior  
U.S. Fish and Wildlife Service

Idaho Fish and Wildlife Office

1387 S. Vinnell Way, Room 368

Boise, Idaho 83709

Telephone (208) 378-5243

<http://www.fws.gov/idaho>



*Eric's edits*

Western Watersheds Project  
Travis Bruner, J.D., Executive Director  
P.O. Box 1770  
Hailey, ID 83333

Dear ~~Executive Director Mr.~~ Bruner:

This letter is in reply to your letter dated April 7, 2014. You requested a written response ~~to commitments in regarding what you claim was~~ our response to your Western Watersheds Project (WWP) letter dated February 1, 2012. The ~~commitments statements~~ you refer to were part of a draft work product which was never signed, dated, or sent to WWP. For the record, the responsive letter which was dated March 12, 2012 and signed by Russell R. Holder for Brian T. Kelly is attached for your review.

Sincerely,

Michael Carrier  
State Supervisor

Attachment: FWS letter dated March 12, 2012

WWP\_Bruner\_itr 041514-2.docx



Faint, illegible text block in the middle of the page, possibly bleed-through from the reverse side.

Faint, illegible text block at the bottom of the page.

**From:** [Jesselyn Hamilton](#)  
**To:** [Hillary Cooley](#); [Brian T Kelly](#); [Dennis Mackey](#); [Mark Robertson](#); [Steve Duke](#); [ERIC.NAGLE@exchange.soi.doi.gov](#); [Russ Holder](#); [kathleen.trever@idfg.idaho.gov](#)  
**Subject:** FWS Response Re: Lynx Trapping  
**Date:** 03/12/2012 05:10 PM  
**Attachments:** [FWS Response RE Lynx Trapping.PDF](#)

---

FYI, please see below.

Jesselyn Hamilton  
Idaho Fish and Wildlife Office  
1387 South Vinnell Way, Suite 368  
Boise, ID 83709  
Phone: (208) 685-6950  
Fax: (208) 378-5262  
Email: [Jesselyn\\_Hamilton@fws.gov](mailto:Jesselyn_Hamilton@fws.gov)  
[www.fws.gov/idaho](http://www.fws.gov/idaho)

The mission of the US Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

----- Forwarded by Jesselyn Hamilton/R1/FWS/DOI on 03/12/2012 05:01 PM -----

**Jesselyn  
Hamilton/R1/FWS/DOI**

To: [jon@westernwatersheds.org](mailto:jon@westernwatersheds.org)  
cc: [virgil.moore@idfg.idaho.gov](mailto:virgil.moore@idfg.idaho.gov),  
[jeff.gould@idfg.idaho.gov](mailto:jeff.gould@idfg.idaho.gov)

03/12/2012 05:01 PM

Subject: FWS Response Re: Lynx Trapping

Dear Mr. Marvel,

Attached is the U.S. Fish and Wildlife Service's correspondence regarding Incidental Lynx Trapping on Salmon-Challis National Forest. A paper copy of this letter is also in the mail to you. If you would like additional copies of the letter please contact me at 208-685-6950.



FWS Response RE Lynx Trapping.PDF

Jesselyn

Jesselyn Hamilton  
Idaho Fish and Wildlife Office  
1387 South Vinnell Way, Suite 368  
Boise, ID 83709  
Phone: (208) 685-6950  
Fax: (208) 378-5262  
Email: [Jesselyn\\_Hamilton@fws.gov](mailto:Jesselyn_Hamilton@fws.gov)



**United States Department of the Interior  
U. S. Fish and Wildlife Service**

**Idaho Fish and Wildlife Office**

1387 S. Vinnell Way, Room 368

Boise, Idaho 83709

Telephone (208) 378-5243

<http://www.fws.gov/idaho>



**John Marvel  
Western Watersheds Project  
Box 1770  
Hailey, Idaho 83333**

**MAR 12 2012**

**Subject: Incidental Lynx Trapping on Salmon-Challis National Forest  
In Reply Refer to: 01EIFW00-2012-TA-0156 Internal Use: COM-241a**

**Dear Mr. Marvel,**

**The U.S. Fish and Wildlife Service (Service) appreciates your interest in the recent incidental trapping of a lynx on lands administered by the Salmon-Challis National Forest (Forest). Lands contained within the boundaries of the Forest have not met the definition of lynx occupancy. We would not expect the Forest nor Idaho Department of Fish and Game to seek Endangered Species Act (ESA) compliance for a species assumed to be absent from an area and where critical habitat has not been identified.**

**Thank you for your interest in the conservation of lynx in Idaho. It should be noted that the lynx was released unharmed by IDFG, and valuable biological information was collected. If you would like further information please contact Russ Holder, Assistant State Supervisor at (208) 378-5384.**

**Sincerely,**

*for*

**Brian T. Kelly  
State Supervisor**

**cc: IDFG, Boise (Moore, Gould)**



United States Department of the Interior  
U.S. Fish and Wildlife Service

Idaho Fish and Wildlife Office

1387 S. Vinnell Way, Room 368

Boise, Idaho 83709

Telephone (208) 378-5243

<http://www.fws.gov/idaho>



Western Watersheds Project  
Travis Bruner, J.D., Executive Director  
P.O. Box 1770  
Hailey, ID 83333

APR 17 2014

Dear Mr. Bruner:

This letter is in reply to your letter dated April 7, 2014. You requested a written response regarding our response to your Western Watersheds Project (WWP) letter dated February 1, 2012. The statements you refer to were not part of the letter was signed, dated, and sent to WWP. For the record, the responsive letter was dated March 12, 2012 and signed by Russell R. Holder for Brian T. Kelly. The March letter is attached for your review.

Thank you for the opportunity to clarify the U.S. Fish and Wildlife Service's position in this matter.

Sincerely,

  
Michael Carrier  
State Supervisor

Attachment: FWS letter dated March 12, 2012



United States Department of the Interior  
U. S. Fish and Wildlife Service  
Idaho Fish and Wildlife Office

1387 S. Vinnell Way, Room 368  
Boise, Idaho 83709  
Telephone (208) 378-5243  
<http://www.fws.gov/idaho>



John Marvel  
Western Watersheds Project  
Box 1770  
Hailey, Idaho 83333

MAR 12 2012

Subject: Incidental Lynx Trapping on Salmon-Challis National Forest  
In Reply Refer to: 01EIFW00-2012-TA-0156 Internal Use: COM-241a

Dear Mr. Marvel,

The U.S. Fish and Wildlife Service (Service) appreciates your interest in the recent incidental trapping of a lynx on lands administered by the Salmon-Challis National Forest (Forest). Lands contained within the boundaries of the Forest have not met the definition of lynx occupancy. We would not expect the Forest nor Idaho Department of Fish and Game to seek Endangered Species Act (ESA) compliance for a species assumed to be absent from an area and where critical habitat has not been identified.

Thank you for your interest in the conservation of lynx in Idaho. It should be noted that the lynx was released unharmed by IDFG, and valuable biological information was collected. If you would like further information please contact Russ Holder, Assistant State Supervisor at (208) 378-5384.

Sincerely,

*for* Brian T. Kelly  
State Supervisor

cc: IDFG, Boise (Moore, Gould)



# *Montana Fish, Wildlife & Parks*

**OFFICER:** Ben Chappelow FG13  
Game Warden  
Montana Fish, Wildlife, and Parks  
855 Hwy 93 N  
Eureka, MT 59917  
406-250-1042

**DATE OF INCIDENT** 12/17/14  
**DATE OF REPORT** 12/19/14  
**SUBJECT** Incidental capture of Lynx

## **Trapper**

Joshua J. Letcher  
ALS: 08/25/1982-9  
3987 West Kootenai Road  
Rexford, MT 59930  
Phone: 406-249-8909

## BRIEF

On 12/17/2014 Game Warden Ben Chappelow received a text message from Josh Letcher stating that he needed to report the incidental trapping of a lynx. The next day Chappelow met with Letcher and investigated the site. Chappelow determined that the trap site was legal and that no violations occurred.

## NARRATIVE

1. On 12/17/2014 at 1921, Game Warden Ben Chappelow received a text message from a local trapper named Josh Letcher. The text message stated that Letcher had caught a lynx and released the lynx from one of his bobcat sets and he wanted to know who he should notify. Chappelow called Letcher and told Letcher that Chappelow was the right person to notify.
2. Over the phone on the 12/17/14 Letcher stated the following to Chappelow:
  - a. He had caught a lynx in his bobcat set earlier that evening on Dodge creek in the west Kootenai near Eureka, Montana.
  - b. The lynx was released unharmed.
3. Chappelow made arrangements to meet with Letcher the evening of 12/18/14 after Letcher got off work so that Letcher could take him to the trap site for an investigation.
4. On 12/19/14 Chappelow met with Letcher at the intersection of Dodge Creek road and the West Kootenai road at around 1845. Chappelow followed Letcher to a parking area at the intersection of the Dodge Creek road and the North Fork of Dodge Creek road. There Letcher and Chappelow unloaded snowmobiles and rode up to the trap site about 1 ½ miles up the road.
5. Upon reaching the trap site Chappelow photographed the area and took notes about the trap site. Chappelow observed the following:
  - a. The trap site was located at N48°56.219 W115°21.650 on Township 37N Range 27W Section 27. The land is administered by the United States Forest Service, Rexford Ranger District, Kootenai National Forest.
  - b. The trap was a ground set buried in sand next to a stump and log under a spruce tree that was approximately 16 inches in diameter.
  - c. The trap was a *Duke #4* coil spring trap with offset jaws with 4 springs.
  - d. Letcher told Chappelow that he used *#7 Violator* lure.
  - e. The trap was anchored by a *Berkshire* stake and held by a 18 inch long 3/32 cable that was rated for 900lbs according to Letcher.
  - f. The trap was baited with a grouse carcass without the lawfully required portions of meat attached and some pieces of deer sinew.
  - g. The trap was tagged with a metal trap identification tag with Letcher's information.
  - h. The trap was located 51 feet from the maintained roadway meeting the 50 foot setback requirement for ground sets for furbearers. The roadway is Forest Service road 7205.

- i. Chappelow found small blood drops at the site that may indicate that the lynx may have sustained a minor cut while trapped. There was no other indication of major injuries.
6. Chappelow conducted an interview with Letcher about the release of the Lynx. Letcher stated the following:
  - a. On 12/17/14 he was with Jim Melton and his son Sheldon when they found the Lynx in his trap around 1630.
  - b. They used a catch pole to hold the lynx down while they released the trap.
  - c. The trap was on the right front foot of the lynx.
  - d. It took them about 2 minutes to release the lynx.
  - e. The lynx appeared unharmed at the time and did not limp away.
  - f. The lynx hid behind a log before running off.
  - g. They set the trap at that location on 12/1/2014 on the opening day of bobcat trapping season.
  - h. They took pictures of the lynx and made a video recording of the release.
7. Chappelow and Letcher rode snowmobiles out of the area and left the site around 2100.
8. Chappelow checked Letcher's trapping license. Letcher had a valid trapping license that was purchased on 09/26/2014.
9. End of Report

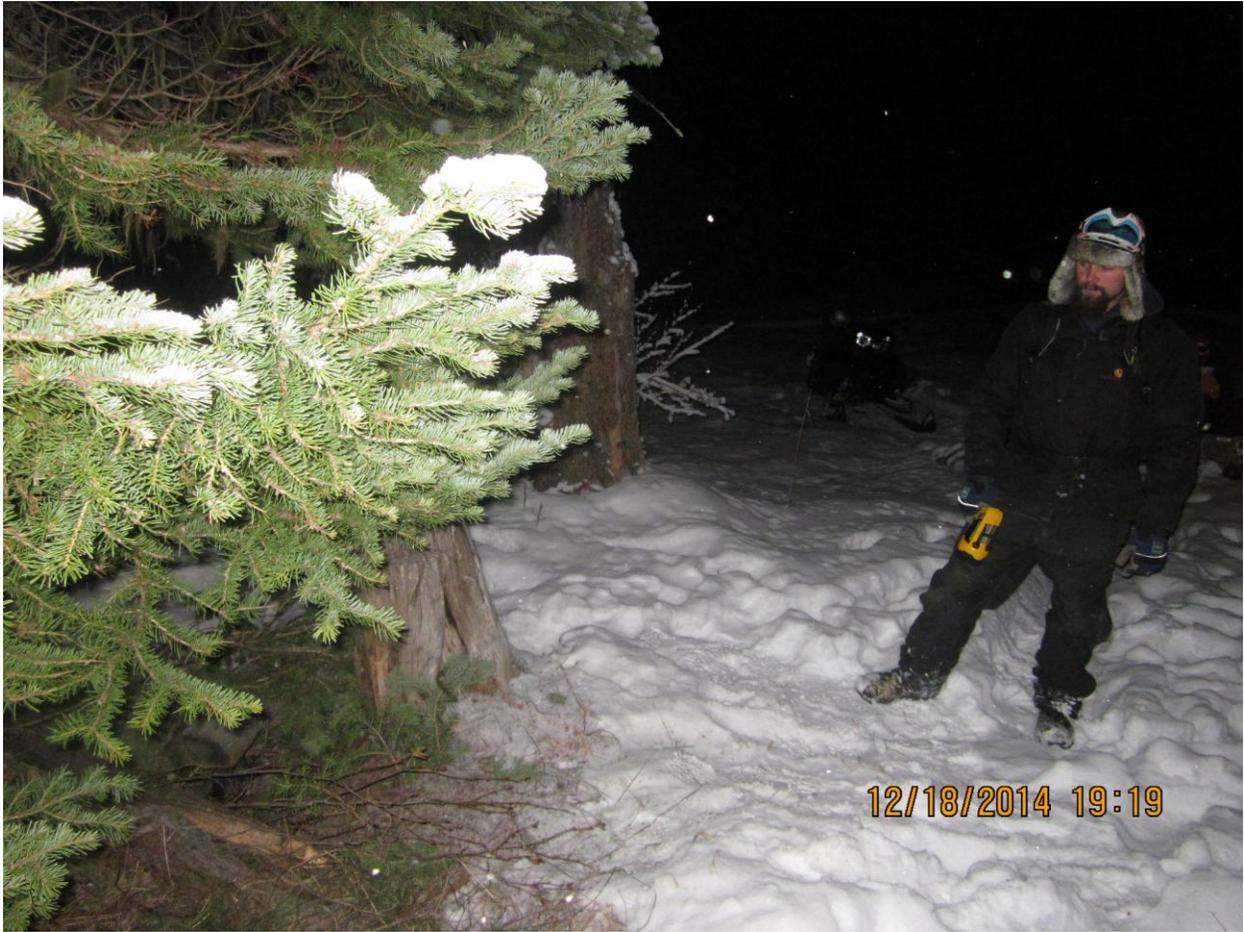
PHOTOS















































## Lynx Incidental Capture Report

Report No. 2013-TRP013

Lynx ID: LIC39

Name of Individual Reporting Capture: [REDACTED] trapper-(Predator Mgmt. Program). [REDACTED]  
[REDACTED]

Name of Biologist/Warden Responding to Report: District Warden Ed Christie and Sgt. Jeff Spencer, Biologists Jen Vashon, John DePue, Amanda DeMusz, Rich Hoppe and Jim Connolly.

Type of Capture: Trap

*Set type:* Dirthole

*Trap type and size:* Foothold – MB550 - 2 coils, offset jaw

*Jaw spread and swivels:* 4 ¾ inches, 3 swivels

*Staking:* drag, 5 feet chain

*Bait:* Mixture of blood, moose meat, and fox urine to taint the bait

*Lure:* Allagash Fur Caller

*Visibility of Bait:* No

*Legal Set?* Yes

Location of Capture: Westmanland

Wildlife Management District: 3

GPS Coordinates (UTM preferred): 559666 E, 5200970 N

GPS Map Datum (NAD 83 preferred): WGS 84/NAD83

Date of Capture: 11-10-13

Disposition of Lynx: Alive, sedated, treated, and released

Age/Sex: Adult female; 19 lbs

### Description of events

**Response:** At 0841, Biologist Jen Vashon received a call on the lynx hotline from a trapper calling to report his capture of a lynx. Jen Vashon notified Warden Service and IFW biological staff in Ashland to initiate a response. Warden Christie and Sgt. Spencer and biologists Jen Vashon and John DePue responded. Biologists Rich Hoppe, Amanda DeMusz, and Jim Connolly joined for additional training and experience. The animal was sedated, examined for injuries, and given supportive care (hydrating fluids, antibiotics, and monitor vital signs) before being released. Wdn. Christie examined the trap and interviewed the trapper for compliance with State trapping laws. The set was legal. Biologist Jen Vashon notified USFWS Special Agent Eric Holmes of the capture.

**Weather conditions:** Overnight: 25 degrees F with clear skies. Daytime: 28 degrees F, snowing (started approximately 0900hrs).

**Disturbance:** None reported or observed at site

**Assessment of the lynx:** The animal was sedated and examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, and torso were normal. We observed some mild swelling on the capture foot. Body temperature was slightly below normal, the lynx was kept warm following established procedures. No broken, chipped, or missing teeth were observed. The animal was a female and weighed 19 lbs. The lynx was given antibiotics and subcutaneous fluids, was weighed, and ear tagged. Additional measurements and DNA were not collected and only 1 ear tag was given, since the animal was beginning to recover from the sedative and additional sedation was not necessary (full assessment complete). The lynx was observed during recovery in a portable dog crate. Upon recovery, the lynx was observed running off, was well coordinated, and was putting full weight on the capture foot.

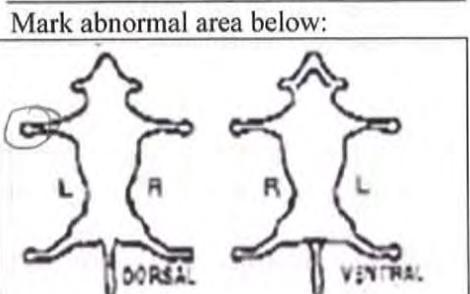
See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information.  
Report prepared by: Jennifer Vashon 11/19/13;

**DATE:** 11-10-13 **Incidental Lynx Capture Form** **Lynx ID#** LIC39  
**Observers:** Victoria Angus DeMa Camacho  
**Recorder:** DePue **Town:** \_\_\_\_\_  
**Road Name:** Black Stone Sidng **County:** Aroostok  
**UTMe** 559666 **UTMn** 5200970 **Datum:** WGS84 NAD27 NAD83  
**Time when manageable:** 1520  
**Time of recovery/ release:** 1710

|                      | Ketaset<br>Concentration<br>100 mg/ml       | Xylazine<br>Concentration<br>100 mg/ml | Time | Delivery<br>Method | Additional Drug<br>(If Needed)  | Amount         |
|----------------------|---------------------------------------------|----------------------------------------|------|--------------------|---------------------------------|----------------|
| 1 <sup>st</sup> Dose | 0.9 ml                                      | 0.19 ml                                | 1441 | Jaw                | Antibiotic (SCorIM) 0.5cc/10lbs | 1.0 cc         |
| 2 <sup>nd</sup> Dose | 0.45 ml                                     | 0.09 ml                                |      | Not given          | Yohimbine(IVorIM)0.5cc/20lbs    | NO - recurring |
| 3 <sup>rd</sup> Dose | 0.6 ml                                      |                                        | 1514 | hand               | Midazolam(IVorIM) 0.5cc/slowly  |                |
| 4 <sup>th</sup> Dose |                                             |                                        |      |                    | Epinephrine(SCorIM) 0.5cc/10lb  |                |
| Comments:            | Lynx was in mid-bell but responded to noise |                                        |      |                    | Doxapram (IVorSL) 1.0cc/22lbs   |                |

**Sex:** M  F **Estimated Age:** Kitten  Subadult  **Adult**  **Year Born(if known)** \_\_\_\_\_ *small body, maybe a subadult*  
**Ear Tag#(Left)** 132 **(Right)** \_\_\_\_\_ **Tag Color:** Yellow

**Subjective (Body Condition):**  
 Poor  Fair  Good  Excellent   
**Objective** Normal  Abnormal   
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities



| Body Temperature   | Time |
|--------------------|------|
| Normal - 101-102.5 |      |
| 100.7 F            | 1521 |
| 99.9 F             | 1531 |
| 99.0 F             | 1558 |
| F                  |      |

**Assessment:** *ho cats, only mild swelling on capture foot near dew claw*  
**Plan:** Release/no sedation  Sedation  **Treat in field**  *standard supportive care - fluids 150ml and antibiotics 1.0cc* Sedate/Transport to Vet  Euthanize

**Teeth:** Normal  Missing  Broken  Worn  Describe: \_\_\_\_\_ Photo? side view (2) / front view   
**Coat Condition:** Prime  Summer  Shedding  Mange  Bare/Worn  Describe: \_\_\_\_\_  
**Capture Foot?** Left Front  Right Front  Left Rear  Right Rear   
**Capture Foot Injuries:** Yes  or No  Describe: \_\_\_\_\_

| BODY MEASUREMENTS                                                                            |            | LYNX IDENTIFICATION         |                   |                            |                                    |
|----------------------------------------------------------------------------------------------|------------|-----------------------------|-------------------|----------------------------|------------------------------------|
| Weight (Actual or Estimate)                                                                  | 19 lbs     | Lynx                        |                   | Bobcat                     |                                    |
| Total Length                                                                                 | X mm       | <b>Tail Banding Pattern</b> | No Bands          | 1 Band                     | 2 Bands 3 Bands                    |
| Chest Girth                                                                                  | X mm       | <b>Color of tip of tail</b> | Completely Black  | Black on top/white beneath |                                    |
| <b>DNA Sample:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>       |            | <b>Hind Foot Coloration</b> | Grey              | Dark Brown                 |                                    |
| Hair <input type="checkbox"/> Blood <input type="checkbox"/> Tissue <input type="checkbox"/> | Mouth Swab | <b>Ear Tuft Length</b>      | >1 inch           | <1 inch                    |                                    |
| <b>Parasites:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>        |            | <b>Toe Coloration</b>       | Left Front (IMMO) | Right Front (IMMO)         | Left Rear (IMMO) Right Rear (IMMO) |
| Sparse <input type="checkbox"/> Abundant <input type="checkbox"/>                            | Sample Y N | (circle white toes)         |                   |                            |                                    |

**Radio Collared:** Y  N  **Initial/Previously Collared** \_\_\_\_\_ **Collar Works:** Y  N  **Make:** LT Sirtrack ATS GPS SAT VHF  
**Frequency:** \_\_\_\_\_ **Replacement Collar Freq:** \_\_\_\_\_ **Collar Life:** \_\_\_\_\_ months **Leather Circum:** \_\_\_\_\_ mm

**Comments:** *disposed of unused ketaset/xylazine; snowing - cat was examined for injuries, weighed, provided supportive care & released. Recovered in kennel & bounded off upon release, well coordinated & putting weight on capture foot.*  
**Photos?** YES  NO  **Photo Number** W.S. **Reviewed Data Sheet?** YES  NO

Subcutaneous fluids - 150 - 200 ml  
 @1545

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER \*advise caller to minimize disturbance to the animal\*

Date 11/10/13 Time 0841 IFW Staff collecting caller info: Jan Vashon  
 Trapper/Individual Reporting [REDACTED]  
 Address [REDACTED] Phone number: [REDACTED]  
 Town: New Sweden LYNX ID (w/o disturbing cat)  
 Location: \_\_\_\_\_ Blacktip tail Yes No  
 GPS coordinates \_\_\_\_\_ E \_\_\_\_\_ N Spotted Yes No  
 GPS datum WGS84 NAD27 NAD83 Eartufts Yes No  
 Directions and meeting time: \_\_\_\_\_ Large feet Yes No  
 \_\_\_\_\_ Grey legs Yes No  
ATV - on Y-1 mile - 1st Ryan Fitzpatrick when  
Blackstone Sidings Rd

Circle all info that applies

Type of trap? Foot-hold Conibear Cage Animal still in trap? Yes No  
 When was trap last tended? \_\_\_\_\_ Alive \_\_\_\_\_ Dead  
 Staking of Trap? Staked Drag Lynx appear injured? Yes No  
 Is animal entangled? Yes No Animal's Behavior Calm Sleeping Pacing  
 Disturbance at the site? Yes No Other: \_\_\_\_\_  
 Type of Disturbance: Vehicle traffic Hunters Equipment operation Animal disturbance

Current weather? Clear Snow Windy Current temperature? 30°F  
 Overnight weather? Clear Snow Windy Overnight temperature? \_\_\_\_\_

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation? Yes No  
 Unresponsive? Yes No  
 Broken bones? Yes No If yes, Compound non-compound  
 Bleeding? Yes No If yes, minor Major  
 Laceration? Yes No If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes No

## 5. Information when ON-SITE: Circle all information that applies

Conibear 110 120 160 220 Other: \_\_\_\_\_  
Foothold trap type #1.75 #2 #3 MB 450 MB 550 Other: \_\_\_\_\_  
 Inside jaw spread 4 3/4 inches Number of Swivels? 3  
 Jaw type Padded Laminated Offset Number of coils: 2  
 Securing method Staked Drag Chain length: 5 ft In-line spring? Yes No  
 Bait? Yes No Type: mouse meat fox urine blood Visible? Yes No  
 Lure? Yes No Type: all kinds of other things Legal Set? Yes No

All people present [REDACTED] 2 Jan Vashon 3 John DeRue  
 4 Jim Connolly 5 Amara Waring 6 Rich Hopper 7 John Christian & Spencer

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured? Y/N Euthanized? Y/N Taken to veterinarian? Y/N  
 Name & Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_  
 Comments: also filled out by Warden Christian

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER *\*advise caller to minimize disturbance to the animal\**

Date 11/10/2013 Time 853 IFW Staff collecting caller info: Game Warden Ed Christie

Trapper/Individual Reporting [REDACTED]

Address [REDACTED] Phone number: [REDACTED]

Town: Westmanlad

LYNX ID (w/o disturbing cat)

Location NE OF BLACKSTONE SIDING

Blacktip tail YES

GPS coordinates N 46.959574

W068.215769

Spotted NO

GPS datum WGS84 NAD27 NAD83

Eartufts YES

Directions and meeting time:

Large feet YES

Grey legs YES

Type of trap? **Foot-hold**

*Circle all info that applies*

Animal still in trap? **Yes**

When was trap last tended? 11/9/2013

**Alive**

Staking of Trap? Drag

Lynx appear injured? **No**

Is animal entangled? **Yes**

Animal's Behavior **Calm**

Disturbance at the site? **No**

Other: \_\_\_\_\_

Type of Disturbance: Vehicle traffic Hunters Equipment operation Animal disturbance

Current weather? Snow

Current temperature? 28

Overnight weather? Clear

Overnight temperature? 25

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL **prior** to chemical immobilization

Animal entangled in vegetation? **Yes**

Unresponsive? **No**

Broken bones? **No** If yes, Compound non-compound

Bleeding? **No** If yes, minor Major

Laceration? **No** If yes, superficial (through 1st layer of skin) major (deep requires sutures)

Limping/dragging limb? **No**

## 5. Information when ON-SITE: *Circle all information that applies*

Conibear

Foothold trap type MB 550

Inside jaw spread 4 3/4 inches Number of Swivels? 3

Jaw type Offset Number of coils: 2

Securing method Drag Chain length: 5' In-line spring? **No**

Bait? **No** Type: \_\_\_\_\_ Visible? \_\_\_\_\_

Lure? **Yes** Type: Allagash Fur Caller **Legal Set?** **Yes**

All people present [REDACTED] Wdn Ed Christie Sgt Jeff Spencer

4 Rich Hoppe Amanda DeMusz Jen Vashon Jim Connley 8. John DePue

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured? **YES** Euthanized? **NO** Taken to veterinarian? **NO**

Name&Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_

Comments:

# Call For Service

CFS Number: **WS13-024296**

Date: **11/10/2013 8:53:42 AM**

## Call For Service

|                  |                               |                  |                                             |
|------------------|-------------------------------|------------------|---------------------------------------------|
| CFS Number       | <b>WS13-024296</b>            | Complainant      | <b>Spencer, Jeff</b>                        |
| Date             | <b>11/10/2013 8:53:42 AM</b>  | Address          | <b>New Sweden</b>                           |
| Dispatcher       |                               | City, State, Zip |                                             |
| Call Source      | <b>0 - Phone</b>              | Phone            |                                             |
| Received         | <b>8:55:02 AM</b>             | Call type        |                                             |
| Dispatched       | <b>11/10/2013 8:55:09 AM</b>  | Reported Offense | <b>6780 - Endangered/Threatened Species</b> |
| Arrived          | <b>11/10/2013 12:01:46 PM</b> | Verified Offense | <b>6780 - Endangered/Threatened Species</b> |
| Cleared          | <b>3:30:00 PM</b>             | Tow Company      |                                             |
| Location         | <b>New Sweden</b>             | Vehicle          |                                             |
| City, State, Zip | <b>New Sweden</b>             | Vehicle License  |                                             |
| Jurisdiction     | <b>W15 - Section 15</b>       | Disposition      | <b>2 - Inactive</b>                         |
| Grid             | <b>02365 - New Sweden</b>     | Priority         |                                             |
| Sector           | <b>WE84</b>                   | Classification   |                                             |
| Map              |                               | Agency           | <b>MWS - Maine Warden Service</b>           |
| X Coordinate     |                               | Case             |                                             |
| Y Coordinate     |                               | Reviewed On      | <b>11/11/2013 8:05:02 AM</b>                |
| Reviewed By      | <b>10636 - Spencer, Jeff</b>  |                  |                                             |

### Officers

10635 - Christie, Ed

10636 - Spencer, Jeff

Notes 2266 CHRISTIE 20 MILES 6.5 HOURS COVERED LYNX CAPTURE BY LOCAL TRAPPER. CLOSED  
2261 Spencer, 80 mi. 4 hrs. assisted biological staff.

=====

CLOSED CALL FOR  
SERVICE=====

### INCIDENT INFORMATION

-----CAD EVENT NUMBER: 130024296 OFFENSE CODE:  
wsre AGENCY: wm (CAD) JURISDICTION: ws (CAD) SECTOR:  
e15 (CAD) GRID: 365 (CAD) CREATED: 20131110 08:55:02 REPORTED:  
20131110 08:53:42 OCCURRENCE START: 20131110 0 OCCURRENCE END: 0 0  
CLOSED: 20131110 16:58:52 CALL TAKER: lhall, d, hr02  
DISPATCHER: lhall, d, hr02 MODIFIED BY: tcissel, hr01 [RESPONSIBLE  
MEMBER] MEMBER: [10635] christie, edward UNIT: ws2266 GROUP ID:  
warden [ATTENDED] MEMBER: [10636] spencer, jeffrey UNIT: ws2261  
[LOCATION] ADDRESS: lat 46.976 lon -68.121 CITY: new sweden LAT/LON:  
4697600,-6812099 LOCATION DETAILS: incident [(INCIDENT DETAILS)]can you get ahold of 2266  
and have him make contact with [REDACTED] ref to him having a lynx in his trap. he has all ready  
made contact with the lynx biologist and he can call me if he wants for more  
information=====

=====

# Call For Service

CFS Number: **WS13-024296**

Date: **11/10/2013 8:53:42 AM**

```
SUBJECTS=====
=====
----- SUBJECT-----
----- [DETAILS] NAME: [REDACTED] APPROXIMATE AGE:
0 DATE OF BIRTH: 0 [PHONE DETAILS]DESCRIPTION: subject PHONE
TYPE: cell PHONE NUMBER: [REDACTED] CALLER INFO: Y
[LOCATION] LAT/LON: , [EXTENDED DETAILS]ISSUED STATE/PROV: me
CALLER INFO: N PATIENT STATUS COLOR SEQ: 0 PATIENT STABLE
INDICATOR: NPATIENT STABLE ALS: N PATIENT STABLE BLS: N [MISCELLANEOUS]
CREATED DATE: 20131110 CREATED TIME: 165800 MODIFIED BY
OPERATOR: tcissel MODIFIED BY WORKSTATION: hr01 LAST MODIFIED: 0
0=====
VEHICLES=====
=====
BUSINESSES=====
=====
DISPOSITIONS=====
=====
----- DISPOSITION-----
----- [DETAILS] CODE: 7629 DISPOSITION DATE/TIME:
20131110 16:58:09 DEVICE: hr01 PERSON ID: tcissel [MISCELLANEOUS]
CREATED DATE: 0 CREATED TIME: 0 MODIFIED BY OPERATOR:
tcissel MODIFIED BY WORKSTATION: hr01 LAST MODIFIED: 20131110
165808=====
=====
MESSAGES=====
=====
NCICReplies=====
=====
== ACTIVITY
LISTS=====
-----[hr02, lhall]: 2266//then 2261 will be coming as
well-----[hr02, lhall]: 2266//the biologist wants to take a
look at it so it will be another 3 hours before she gets
here=====
INCIDENT
ASSOCIATIONS=====
=====
```

Celeste K. Miller, ISB # 2590  
McDevitt & Miller LLP  
420 West Bannock  
P.O. Box 2564-83701  
Boise, Idaho 83702  
Tel: 208-343-7500  
Fax: 208-336-6912  
ck@mcdevitt-miller.com

Peter M.K. Frost, applicant, *pro hac vice* (OR Bar # 911843)  
Western Environmental Law Center  
1216 Lincoln Street  
Eugene, Oregon 97401  
Tel: 541-359-3238  
Fax: 541-485-2471  
frost@westernlaw.org

Melissa Hailey, applicant, *pro hac vice* (CO Bar # 42836)  
Antonio Bates Bernard Professional Corporation  
3200 Cherry Creek Drive South, Suite 380  
Denver, Colorado 80209  
Tel: 303-733-3500  
Fax: 303-733-3555  
mhailey@abblaw.com

Attorneys for Plaintiff WildEarth Guardians

Timothy J. Ream, applicant, *pro hac vice* (CA Bar # 283971)  
Center for Biological Diversity  
351 California Street, Suite 600  
San Francisco, California 94104  
Tel: (415) 632-5315  
tream@biologicaldiversity.org

Attorney for Plaintiffs Center for Biological Diversity, Friends of the  
Clearwater, and Western Watersheds Project

UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF IDAHO

Center for Biological Diversity, Western  
Watersheds Project, Friends of the  
Clearwater, WildEarth Guardians,

Plaintiffs,

Case No. \_\_\_\_\_

COMPLAINT FOR DECLARATORY  
AND INJUNCTIVE RELIEF

v.

C.L. “Butch” Otter, Governor of Idaho, in his official capacity; Virgil Moore, Director of the Idaho Department of Fish and Game, in his official capacity; Brad Corkill, Fred Trevey, Bob Barowsky, Mark Doerr , Randy Budge, Kenny Anderson, and Will Naillon, members of the Idaho Fish and Game Commission, in their official capacities,

Defendants.

## INTRODUCTION

1. Plaintiffs Center for Biological Diversity et al. respectfully file this suit challenging the actions of Defendants C.L. “Butch” Otter *et al.* (“State Defendants”), who have allowed, and continue to allow, the trapping of wildlife in the range of the Canada lynx (*Lynx canadensis*), a species of cat listed as threatened with extinction under the Endangered Species Act (“ESA”). 16 U.S.C. §§ 1531-1544. Trapping in lynx habitat in Idaho has resulted in, and is reasonably likely to continue to result in, the illegal “take” of lynx under the ESA. State Defendants have violated, and remain in violation, of the ESA by authorizing trapping that has a reasonable probability to take lynx in the absence of an Incidental Take Permit (“ITP”) or other authorization from the U.S. Fish and Wildlife Service (“Service”) that would authorize any such takes. Plaintiffs seek a declaratory judgment that State Defendants are violating the ESA and an injunction ordering State Defendants to bring into compliance with the ESA their authorization of trapping in lynx habitat in Idaho.

## JURISDICTION AND VENUE

2. The Court has jurisdiction pursuant to the citizen suit provision of the ESA, 16 U.S.C. § 1540, and because this case involves a federal question. 28 U.S.C. § 1331. On February 27, 2012, WildEarth Guardians gave State Defendants notice of their intent to sue under the ESA for authorizing trapping in lynx habitat. On April 7, 2014, Center for Biological

Diversity, Western Watersheds Project, and Friends of the Clearwater gave State Defendants notice of their intent to sue under the ESA for authorizing trapping in lynx habitat. On April 18, 2014, WildEarth Guardians gave State Defendants amended notice of their intent to sue under the ESA for authorizing trapping in lynx habitat. More than 60 days have elapsed since State Defendants received these notices. The relief Plaintiffs seek is authorized by the ESA and by the Declaratory Judgment Act. 16 U.S.C. § 1540; 28 U.S.C. § 2201.

3. Venue is proper in this Court pursuant to 16 U.S.C. § 1540(g)(3)(A) and 28 U.S.C. § 1391(e), and the acts complained of herein occurred in this district.

### **PARTIES**

4. Plaintiff Center for Biological Diversity is a non-profit organization dedicated to the preservation, protection, and restoration of biodiversity, native species, and ecosystems. The Center is based in Tucson, Arizona with additional offices in Alaska, California, Minnesota, Nevada, New Mexico, New York, Oregon, Washington, and the District of Columbia. The Center has long advocated on behalf of the Canada lynx and sought to strengthen protections for it and its habitat. Over 20 years ago, in 1994, the Biodiversity Legal Foundation, an organization which later merged with the Center, petitioned the Service to list the contiguous U.S. population of Canada lynx under the ESA. As the result of a pair of lawsuits brought by the Biodiversity Legal Foundation and additional plaintiffs, the lynx was listed under the ESA in 2000. In 2008, the Center filed an ESA section 9 lawsuit on behalf of lynx in the District of Minnesota that resulted in restrictions on the types of traps, snares and bait that can be used in lynx habitat in that state. In 2013, in response to a pair of lawsuits involving the Center and other conservation groups, the Service proposed critical habitat for Canada lynx, including in Idaho.

Plaintiff Western Watersheds Project (“Project”) is a non-profit conservation group headquartered in Idaho, with offices and staff in Idaho, Arizona, California, Montana, Oregon, Wyoming, and Utah. The Project is dedicated to protecting and conserving the public lands and natural resources of watersheds in the American West. The Project, which has over 1200 members, is concerned with and active in seeking to protect and improve the wildlife habitat, wilderness values, and other natural resources and ecological values of watersheds throughout

the West, including in Idaho. Project staff and members use lynx habitat in Idaho for recreation, scientific study, and aesthetic purposes, and will continue to do so in the future. The Project actively monitors ecological conditions in Idaho and reviews and comments on agency wildlife management decisions, including those at issue in this case, and publicizes adverse ecological effects of trapping lynx. Trapping in lynx habitat impairs recreational, aesthetic, and scientific interests of Project members.

5. Plaintiff Friends of the Clearwater (“Friends”) is a non-profit conservation group dedicated to protecting and preserving the native biodiversity of the Clearwater Bioregion. Its office is in Moscow, Idaho. Friends has over 800 members. Friends’ members include biologists, outfitters, recreationists, and researchers who observe, enjoy, and appreciate Idaho’s native wildlife, including lynx, and the quality of habitat for lynx, including wilderness and roadless areas where they are found. Friends’ members will continue to use areas inhabited by lynx. Friends’ members are harmed by State’s allowances of trapping in lynx habitat, because it has and will likely continue to lead to the take of lynx.

7. Plaintiff WildEarth Guardians is non-profit conservation group with offices in Santa Fe, New Mexico; Denver, Colorado; Missoula, Montana; Portland, Oregon; and Tucson, Arizona. Guardian’s mission is to protect and restore wildlife, wild places, and wild rivers in the American West. This mission encompasses ensuring the long-term survival and recovery of lynx in Idaho, including protecting individual lynx from take. Guardians has over 4,500 members, many of whom live in or visit Idaho. Guardians’ members have been, and continue to be, injured by State Defendants’ authorization of trapping in lynx habitat because such members have professional, educational, inspirational, personal, aesthetic, and recreational interests in the survival and recovery of lynx, and the past and likely continued take of lynx in Idaho from trapping diminishes and otherwise generally harms those interests. State Defendants have caused these injuries, and the Court can redress them.

8. Defendant C.L. “Butch” Otter is the Governor of Idaho. He is named and sued in his official capacity. Governor Otter is responsible for, among other things, implementing state wildlife and trapping laws, and appointing state officials who oversee and implement those laws.

9. Defendant Virgil Moore is the Director of the Idaho Department of Fish and Game (“IDFG”). He is named and sued in his official capacity. Mr. Moore is responsible for, among other things, implementing and changing state wildlife and trapping laws and policies, and managing and oversight of state officials who oversee and implement those laws and policies.

10. Defendant Brad Corkill is a member of the Idaho Fish and Wildlife Commission. Mr. Corkill is sued in his official capacity. Mr. Corkill is responsible for, among other things, promulgating state wildlife and trapping laws and policies, and managing and oversight of state officials who oversee and implement those laws and policies.

11. Defendant Fred Trevey is a member of the Idaho Fish and Wildlife Commission. Mr. Trevey is sued in his official capacity. Mr. Trevey is responsible for, among other things, promulgating state wildlife and trapping laws and policies, and managing and oversight of state officials who oversee and implement those laws and policies.

12. Defendant Bob Barowsky is a member of the Idaho Fish and Wildlife Commission. Mr. Barowsky is sued in his official capacity. Mr. Barowsky is responsible for, among other things, promulgating state wildlife and trapping laws and policies, and managing and oversight of state officials who oversee and implement those laws and policies.

13. Defendant Mark Doerr is a member of the Idaho Fish and Wildlife Commission. Mr. Doerr is sued in his official capacity. Mr. Doerr is responsible for, among other things, promulgating state wildlife and trapping laws and policies, and managing and oversight of state officials who oversee and implement those laws and policies.

14. Defendant Randy Budge is a member of the Idaho Fish and Wildlife Commission. Mr. Budge is sued in his official capacity. Mr. Budge is responsible for, among other things, promulgating state wildlife and trapping laws and policies, and managing and oversight of state officials who oversee and implement those laws and policies.

15. Defendant Kenny Anderson is a member of the Idaho Fish and Wildlife Commission. Mr. Anderson is sued in his official capacity. Mr. Anderson is responsible for, among other things, promulgating state wildlife and trapping laws and policies, and managing and oversight of state officials who oversee and implement those laws and policies.

16. Defendant Will Naillon is a member of the Idaho Fish and Wildlife Commission. Mr. Naillon is sued in his official capacity. Mr. Naillon is responsible for, among other things, promulgating state wildlife and trapping laws and policies, and managing and oversight of state officials who oversee and implement those laws and policies.

### FACTS

17. The Canada lynx is a forest carnivore. Lynx have large feet and long legs that distinguish them among cat species. Lynx can travel in deep snow characteristic of the boreal and western montane and subalpine regions of North America. In winter, lynx prefer mature, moist multi-storied coniferous forests stands with high horizontal cover. In summer, lynx generally remain in their winter ranges, but may broaden their ranges to include young regenerating forests used by hares.

18. Lynx prey primarily on snowshoe hare (*Lepus americanus*). Lynx foraging and denning habitat selection is closely tied to the distribution and quality of snowshoe hare cover and forage habitats. Lynx home range size and population densities vary with abundance of prey. Lynx population densities are usually less than 0.25 lynx per square mile. In western North America, lynx home range sizes have been estimated as 15 to as many as 300 square miles. Lynx are highly mobile and can travel distances such as 60 miles daily. Lynx may disperse at any time of the year. Lynx kittens generally stay with their mothers for their first year while she teaches them to hunt.

19. Snow conditions also determine the distribution of lynx. Lynx are adapted for hunting snowshoe hares and surviving in areas that have cold winters with deep, fluffy snow for extended periods. These adaptations provide lynx a competitive advantage over potential competitors, such as bobcats or coyotes. Bobcats and coyotes have a higher foot load (more weight per surface area of foot), which causes them to sink into the snow more than lynx.

Bobcats and coyotes cannot hunt efficiently in fluffy or deep snow and are at a competitive disadvantage to lynx.

20. In Idaho, lynx can occur in montane and subalpine coniferous forest habitats at least as low as 4,000 feet elevation. In Idaho, lynx occur as far south as the northern Salmon River and Lemhi mountains. In Idaho, lynx occur east and south on the Yellowstone Highlands and Caribou Range. Several lynx occurrences are known from the Coeur d'Alene River, St. Joe River, and St. Maries River basins in Idaho.

21. Lynx occur in Adams County in Idaho. Lynx occur in Bear Lake County in Idaho. Lynx occur in Benewah County in Idaho. Lynx occur in Blaine County in Idaho. Lynx occur in Boise County in Idaho. Lynx occur in Bonner County in Idaho. Lynx occur in Bonneville County in Idaho. Lynx occur in Boundary County in Idaho. Lynx occur in Butte County in Idaho. Lynx occur in Camas County in Idaho. Lynx occur in Caribou County in Idaho. Lynx occur in Clark County in Idaho. Lynx occur in Clearwater County in Idaho. Lynx occur in Custer County in Idaho. Lynx occur in Elmore County in Idaho. Lynx occur in Franklin County in Idaho. Lynx occur in Fremont County in Idaho. Lynx occur in Idaho County in Idaho. Lynx occur in Jefferson County in Idaho. Lynx occur in Kootenai County in Idaho. Lynx occur in Latah County in Idaho. Lynx occur in Lemhi County in Idaho. Lynx occur in Madison County in Idaho. Lynx occur in Nez Perce County in Idaho. Lynx occur in Shoshone County in Idaho. Lynx occur in Teton County in Idaho. Lynx occur in Valley County in Idaho.

22. In 2000, the Service listed the Canada lynx in the contiguous United States – including in Idaho – as threatened with extinction under the ESA. On February 25, 2009, the Service designated critical habitat for lynx. The Service deems lynx critical habitat as essential to the survival and recovery of lynx in the contiguous United States. The Service designated as critical habitat only those areas deemed “occupied” by lynx. The Service believes “occupied” lynx habitat means lands mapped as lynx habitat and where there are at least two verified lynx observations or records since 1999 or there is evidence of lynx reproduction.

23. The estimated population of lynx in Idaho has been estimated as low as 100. The Idaho population of lynx is crucial as it provides connectivity with other lynx populations across the American West. Lynx disperse from Canada into Idaho. Lynx disperse from Idaho into Canada. Lynx disperse from Montana into Idaho. Lynx disperse from Idaho into Montana. Lynx disperse from Washington into Idaho. Lynx disperse from Idaho into Washington. Lynx disperse from Colorado into Idaho. Lynx disperse from Idaho into Colorado. The dispersal and interchange of lynx across the United States-Canada border helps maintain lynx populations in the contiguous United States and helps ensure they persist. The dispersal and interchange of lynx across state borders within the contiguous United States helps maintain lynx populations and helps ensure they persist.

24. Lynx have little fear of human scent. Lynx respond to baits and lures. Lynx can be attracted using visual attractants. Lynx can be caught in traps and snares set for other species. Lynx have been caught in traps and snares set for other species. Lynx have been injured and killed as a result of being caught in traps and snares set for other species.

25. In Idaho, it is illegal for anyone to hunt, trap, fish for, or take any wild animal, bird, or fish, without having first procured a license from the State of Idaho. IDFG issues permits, licenses, or other authorizations for trapping in Idaho. In Idaho, there are seven trapping regions, each of which is comprised of certain counties.

26. In Idaho, lynx are classified as a fur-bearing animal. In Idaho, there is no open season for lynx. In Idaho, trapping is allowed for animals such as bobcat, beaver, muskrat, mink, marten, otter, and wolves. In Idaho, animals such as bobcat, beaver, muskrat, mink, marten, otter, and wolves inhabit lynx habitat. In Idaho, trapping is not disallowed in occupied lynx habitat, lynx critical habitat, and habitat for lynx in the state. There are no restrictions on trapping in Idaho to minimize take of lynx.

27. In Idaho, trappers with permits may use leghold or foothold traps, Conibear or other types of body-gripping traps, and snares within lynx habitat. Leghold/foothold traps are designed to capture and hold an animal by the leg, foot, or toe. A leghold/foothold trap's two spring-powered metal jaws shut when an animal steps on the trigger. Conibear traps –

sometimes referred to as “body-crushing” or “killer” traps – are made of two metal rectangular jaws hinged at the side, with a spring affixed to one or both sides. When an animal walks through the center of the rectangles and brushes the trigger, a Conibear trap’s jaws close with a scissor-like action on the animal’s body. A snare is a wire noose attached at one end to a stake or anchor. Snares catch an animal either by the neck, by the midsection of the body, or by the foot or leg. Snares work by tightening around the animal as it struggles. Leghold or foothold traps, Conibear or other types of body-gripping traps, and snares do not discriminate between wildlife species.

28. In Idaho, there are voluntary trapping guidelines to reduce injury and minimize non-target catches such as wolverine and lynx. The guidelines are not mandatory and are not included in the State’s trapping regulations. If a trapper does not follow or otherwise obey the guidelines, the trapper is not liable under Idaho State Law for not complying with, or otherwise violating, the guidelines. If a trapper traps a lynx in Idaho, the trapper is not required under Idaho State Law to report having trapped a lynx unless it dies. If a trapper traps a lynx and the lynx is killed or otherwise dies, the trapper is required under Idaho State Law to report having killed a lynx. Any person taking a bobcat in Idaho must comply with mandatory check and report and pelt tag requirements.

29. In 2012, Idaho State wildlife staff members photographed three lynx in the Purcell Mountains in Idaho. The lynx were photographed in designated critical habitat for lynx.

30. In January 2012, a lynx was caught in a trap in the Salmon-Challis National Forest in Idaho. The trap was a leghold/foothold trap. The lynx was released. It is unknown whether the lynx survived after being trapped. The lynx was identified as a male, and a new individual to the Northern Rocky Mountains lynx DNA database.

31. In December 2012, a lynx was caught in a trap in Boundary County in Idaho. The lynx was caught in a leghold/foothold trap. The lynx was misidentified as a bobcat. The lynx was shot and killed.

32. In January 2014, a lynx was caught in a trap in the Cabinet Mountain range in Idaho. The lynx was trapped in a cage trap. A cage trap is a large cage that includes a cage door that shuts when it is triggered. The cage trap was baited. The lynx was not killed in the trap. The lynx was released with a radio collar, so it can be tracked.

33. The best available evidence reveals that the amount of reported take of lynx from trapping and snaring is less than the amount of actual take of lynx.

34. In the last 14 years, the Idaho Department of Fish and Game has issued an increasing number of trapping licenses. For 2001-2002, the Department issued 647 trapping licenses. For 2005-2006, the Department issued 1001 trapping licenses. For 2010-2011, the Department issued 1222 trapping licenses. For 2012-2013, the Department issued 1943 trapping licenses.

### **CLAIM FOR RELIEF**

#### **Violation of ESA § 9**

35. Plaintiffs reallege all previous paragraphs.

36. Section 9 of the ESA prohibits any person from taking an endangered species. 16 U.S.C. § 1538(a)(1)(B). FWS has extended the prohibition on take to lynx as a threatened species. 50 C.F.R. § 17.31(a). The ESA defines “take” to mean “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” 16 U.S.C. § 1532(19). The ESA defines a “person” to include any “officer, employee, agent, department, or instrumentality of the Federal Government, of any State, municipality, or political subdivision of a State.” 16 U.S.C. § 1532(13). The ESA prohibits a person not only from taking listed species, it also prohibits a third party from authorizing or allowing a person to conduct an activity that results in the take of a listed species. State officials and agencies that authorize, allow, permit, or license activities that have resulted in take of threatened species and are reasonably likely to continue to result in take of threatened species have violated and are in violation of the ESA. State Defendants have violated, and are in violation, of the ESA by authorizing trapping in lynx habitat in Idaho because that authorization has caused, and is reasonably likely to continue to cause, the incidental take of Canada lynx.

### REQUEST FOR RELIEF

For the reasons stated herein, Plaintiffs respectfully request that the Court grant the following relief:

- A. Declare that State Defendants have violated, and continue to violate, Section 9 of the ESA;
- B. Declare that State Defendants must obtain an Incidental Take Permit before allowing any lawful trapping in lynx habitat;
- C. Enjoin State Defendants from violating the ESA by ordering them to bring Idaho's trapping scheme into compliance with federal law;
- D. Award Plaintiffs their costs and expenses of litigation, including reasonable attorneys' fees pursuant to 16 U.S.C. § 1540(g), or any other provision; and
- E. Grant such other relief that this Court deems necessary, just, or proper.

Dated: June 30, 2014.

Respectfully submitted,

/s/ Celeste K. Miller  
Celeste K. Miller, ISB # 2590  
McDevitt & Miller LLP  
420 West Bannock  
P.O. Box 2564-83701  
Boise, Idaho 83702  
Tel: 208-343-7500  
Fax: 208-336-6912  
[ck@mcdevitt-miller.com](mailto:ck@mcdevitt-miller.com)

/s/ Peter M.K. Frost  
Peter M.K. Frost, applicant, *pro hac vice*  
Western Environmental Law Center  
1216 Lincoln Street  
Eugene, Oregon 97401  
Tel: 541-359-3238  
Fax: 541-485-2471  
[frost@westernlaw.org](mailto:frost@westernlaw.org)

/s/ Melissa Hailey

Melissa Hailey, applicant, *pro hac vice*  
Antonio Bates Bernard Professional Corp  
3200 Cherry Creek Drive South, Suite 380  
Denver, Colorado 80209  
Tel: 303-733-3500  
Fax: 303-733-3555  
[mhailey@abblaw.com](mailto:mhailey@abblaw.com)

Attorneys for Plaintiff WildEarth Guardians

/s/ Timothy J. Ream

Timothy J. Ream, applicant, *pro hac vice*  
Center for Biological Diversity  
351 California Street, Suite 600  
San Francisco, California 94104  
Tel: (415) 632-5315  
[tream@biologicaldiversity.org](mailto:tream@biologicaldiversity.org)

Attorney for Plaintiffs Center for Biological  
Diversity, Friends of the Clearwater, and  
Western Watersheds Project

**Lynx Incidental Capture Report**

**Report No. 2012-TRP001**

**Lynx ID: LIC22**

**Name of Individual Reporting Capture:** [REDACTED]

**Name of Biologist/Warden Responding to Report:** Wdn Troy Dauphinee, Regional Biologist  
Scott McLellan

**Type of Capture:** Trap

*Set type:* Dirthole

*Trap type and size:* 1.65 Bridger

*Jaw spread and swivels:* 5 1/16 " and 5 swivels

*Staking:* Staked short chain

*Bait:* Yes, ground mice

*Lure:* No

*Visibility of Bait:* No

*Legal Set?* Yes

**Location of Capture:** Shawtown Twp. (TA R12 WELS)

**Wildlife Management District:** 9

**GPS Coordinates (UTM preferred):** 481838, 5052794

**GPS Map Datum (NAD 83 preferred):** Nad 83

**Date of Capture:** 10/18/12

**Disposition of Lynx:** Alive, no injury, sedated and released on-site

**Age/Sex:** Adult female; 19 lbs

**Description of events**

**Response:** At 1230 pm, Wdn Troy Dauphinee responded to the call from trapper that he caught a lynx. Biologist Scott McLellan and Wdn Dauphinee responded on site. Biologist Jen Vashon notified USFWS Special Agent Eric Holmes. The animal was sedated, examined for injuries and given antibiotic. The animal was uninjured and released on site. Wdn Dauphinee examined the trap and interviewed the trapper. The set was legal.

**Weather conditions:** Overnight temperature was 29 degrees F and clear skies. Daytime temperatures was 55 degrees F with clear skies.

**Disturbance:** None reported at site, but a few bird hunters in the area

**Assessment of the lynx:** The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, torso, and extremities were normal. Body temperature was normal. No broken, chipped, or missing teeth. No swelling or injury on capture foot. The animal was a healthy adult female and weighed 19lbs. The animal was given antibiotics, measurements, and dna were collected. The female was observed during recovery and walked away putting weight on all four legs.

See attached check list for reporting lynx captures, capture form, and WS Incident Card for more information.

Report prepared by: Jennifer Vashon 10/23/2012; updated 10/24/12

Report reviewed & updated by: Scott McLellan (10/23/12 & Troy Dauphinee (10/24/12)

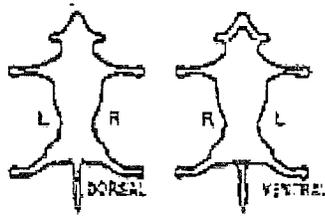
DATE: 10/18/12 <sup>TRAY</sup> ~~XXXXXXXXXX~~ **Incidental Lynx Capture Form** Lynx ID# LIC 22  
 Observers: SRM, KBM, KRM  
 Recorder: KRISTY McLELLAN Town: SHANTOWN TWP  
 Road Name: SMITHTOWN TWP County: PISCATAQUIS  
 UTMe 19T04 81838 UTMn 505 2794 Datum: WGS84 NAD27 NAD83  
 Time when manageable: 1617h  
 Time of recovery/ release: 1810h

| Mix Used:                                        | Ketaset Concentration: mg/ml | Xylazine Concentration: mg/ml | 5:1 Ket/Xyl Concentration: mg/ml | Time  | Delivery Method | Additional Drug (If Needed)      | Amount |
|--------------------------------------------------|------------------------------|-------------------------------|----------------------------------|-------|-----------------|----------------------------------|--------|
| 1 <sup>st</sup> Dose                             | m l                          | m l                           | 1.0 m l                          | 1607h | SYRINGE P/P     | Antibiotic (SCorIM) 0.5cc/10lbs  | 1.0cc  |
| 2 <sup>nd</sup> Dose                             | m l                          | m l                           | m l                              |       |                 | Yohimbine (IVorIM) 0.5cc/20lbs   | 0.5cc  |
| 3 <sup>rd</sup> Dose                             | m l                          | m l                           | m l                              |       |                 | Diazepam (IVorIM) 0.5cc/slowly   |        |
| 4 <sup>th</sup> Dose                             | m l                          | m l                           | m l                              |       |                 | Epinephrine (SCorIM) 0.02cc/20lb |        |
| Comments: TOOK COCKTAIL WELL -- DOWN A LONG TIME |                              |                               |                                  |       |                 | Doxapram (IVorSL) 1.0cc/22lbs    |        |

Ear Tag#(Left) 218 (Right) 218 Tag Color: Yellow Green Red Other: \_\_\_\_\_  
 Radio Collared: Y N Initial/Previously Collared Collar Works: Y N Make: LT Sirtrack ATS GPS SAT VHF  
 Radio Collar Frequency: \_\_\_\_\_ Replacement Collar Freq.: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months  
 Leather Circumference: \_\_\_\_\_ mm

**PHYSICAL INFORMATION**  
 Sex: M F Year Born(if known) \_\_\_\_\_  
 Estimated Age: Kitten Subadult Adult  
 Teeth: Normal  Missing  Broken  Worn   
 Describe: \_\_\_\_\_  
 Photo of Teeth? side view (2) \_\_\_\_\_ front view \_\_\_\_\_  
 Coat Condition: Prime  Summer   
 Shedding  Mange  Bare/Worn \_\_\_\_\_  
 Capture Foot? Front: L, R or Hind: L, R  
 Capture Foot Injuries? Y N  
 Describe: LOOKED + FELT GOOD  
 NOT SWOLLEN @ ALL + GOOD CAPILARY REFILL

**Subjective Body Condition:**  
 Poor  Fair  Good  Excellent   
**Objective** Normal Abnormal  
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities    
 Assessment: EVERYTHING APPEARS + FEELS NORMAL; ANIMAL NEEDS NO ADDITIONAL TREATMENT  
 Plan: Release/no sedation  
 Sedation: Treat in field; or Transport to Vet;  
 Euthanize: ADMINISTERED ANTIBIOTIC



| Body Temp | Time  |
|-----------|-------|
| 101.8 F   | 1622h |
| 101.4 F   | 1630h |
| 101.2 F   | 1645h |
| F         |       |

**BODY MEASUREMENTS**

|                             |         |                      |                              |        |         |         |
|-----------------------------|---------|----------------------|------------------------------|--------|---------|---------|
| Weight (Actual or Estimate) | 19 lbs  | Tail Banding Pattern | No Bands                     | 1 Band | 2 Bands | 3 Bands |
| Neck Circumference          | — mm    | Color of tip of tail | Completely Black             |        |         |         |
| Chest Girth                 | — mm    | Hind Foot Coloration | Dark Brown Grey Other: _____ |        |         |         |
| Shoulder Height             | 410 mm  | Toe Coloration       | Inside                       | Middle | Middle  | Outside |
| Tail Length (tip of bone)   | 140 mm  | Left Front           |                              |        |         |         |
| Tail Length (tip of tail)   | 125 mm  | Right Front          |                              |        |         |         |
| Total Length                | 1020 mm | Left Rear            |                              |        |         |         |
| Zygomatic Arch              | — mm    | Right Rear           |                              |        |         |         |
| Ear Tuft Length             | 48 mm   |                      |                              |        |         |         |

Scars: Y N Description \_\_\_\_\_  
 DNA: Hair Sample Y N Tissue Sample Y N Blood Sample Y N  
 Parasites: Y N Sample: Y N Rare Light Common  
 Photos? YES NO Photo Number \_\_\_\_\_  
 Reviewed Data Sheet? YES NO lrm

Comments: APPEARS TO HAVE HAD A LITTER (LARGE NIPPLES W/ MISSING HAIR); GOOD RECOVERY + USE OF LIMBS

**CHECK LIST FOR REPORTING & RESPONDING TO INCIDENTAL CAPTURES OF LYNX**

**1. Obtain information from CALLER**

Date 10-18-12 Time 1230 IFW Staff collecting caller info: Troy Dauphinee  
 Trapper/Individual Reporting: [Redacted] Phone number: [Redacted]  
 Address: [Redacted]

Circle all info that applies

Type of trap?  Foot-hold  Conibear  
 Animal still in trap?  Yes  No  
 Animal's Behavior  Calm  Sleeping  Pacing

When was trap last tended? 10-17-12 1230  
 Is animal entangled? Yes  No   
 Lynx injured? Yes  No

Disturbance at the site? Yes  No  Other: \_\_\_\_\_  
 Vehicle traffic Human disturbance Equipment operation Animal disturbance  
 \*advise caller to minimize disturbance to the animal \*

Current weather?  Clear  Rain  Snow  Windy  
 Overnight weather?  Clear  Rain  Snow  Windy  
 Current temperature? 55°  
 Overnight temperature? 29°

Directions and meeting time:

2. Contact IFW lynx hotline 592-4734 to inform lynx specialist/ Mammal Group

3. At the site minimize disturbance (crowd and/or traffic control)

**4. Information when ON-SITE:** Circle all information that applies

Size of trap #1.75 #2 #3 110 120 160 220 Other 1.65  
 Inside jaw spread 5.16 inches Number of Swivels? 5  
 Jaw type  Padded  Laminated  Offset  
 Securing method  Staked  Drag  
 Bait?  Yes  No Visible? Yes  No   
 Lure?  No  Yes Type: Ground mice  
 Town: Shawtown TWP. (TA R12)  
 Location: \_\_\_\_\_  
 GPS coordinates 45° 37.7070' N 69° 13.9801' W  
 GPS datum  WGS84  NAD27  NAD83

All people present:  
 1. [Redacted]  
 2. [Redacted]  
 3. Scott McLellan  
 4. Troy Dauphinee  
 5. Kristy McLellan  
 6. Ryan McLellan  
 7. \_\_\_\_\_

**5. At the site: Assess the ANIMAL prior to chemical immobilization**

Animal entangled in vegetation? Yes  No   
 Unresponsive? Yes  No   
 Broken bones? Yes  No  If yes, Compound non-compound  
 Bleeding? Yes  No  If yes, minor Major  
 Laceration? Yes  No  If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes  No

**6. Anesthesia (follow protocol and complete capture form)**

**7. Action Taken:**  
 Release uninjured?  Y  N  
 Euthanized?  Y  N  
 Taken to rehab. Center?  Y  N  
 Name & Location of Rehab Center: \_\_\_\_\_ Phone #: \_\_\_\_\_

Comments:

\*See Department Policy for situations when you can advise the trapper to release a lynx\*

# Maine Warden Service Investigation Report

Case No. **WS12-M08129**  
Report No. **WS12-M08129.1**  
Report Date: **10/18/2012**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

**1**

Page 1 of 1

Subject: **6780 - Endangered/Threatened Species**

Case Report Status **S - Submitted**  
Occurred On **10/18/2012 12:00:00 PM**  
(and Between)  
Location of Incident **Shawtown Twp**  
Grid **11749 - Shawtown Twp**  
Call Source **Phone**  
Vehicle Activity  
Vehicle Traveling  
@ Cross Street  
Geo Code **11749 - SHAWTOWN TWP**

Date Entered **10/22/2012 9:12:27 AM**  
Entered By **10867 - Dauphinee, Troy**  
Date Verified  
Verified By  
Date Approved  
Approved By  
Connecting Cases  
Disposition **Not a Crime/Other Service**  
Clearance Reason  
Date of Clearance  
Reporting Agency **Maine Warden Service**  
Division **MWS - Section 11**  
Notified  
Local Geo Code

Reporting Officer  
**10867 - Dauphinee, Troy**

Date/Time Submitted  
**10/22/2012 9:25:11 AM**  
Assisted By

Entry Method  
Entry Point  
Suspect Vehicle  
Color  
Report Narrative

Suspect Actions(MO)  
Entry Direction  
Suspect Vehicle Body  
Style

I responded to the lynx caught in the trap in Shawtown Township. It was near Sixth Roach Pond. The trapper was [REDACTED], Maine. I measured and inspected the trap setup and determined that it was a legal set. I also assisted Biologist Scott McLellan with moving the lynx, etc. I left the area when Biologist McLellan advised that he was all set.

## Offense Detail: 6892 - Trapping - Other

Offense Description **6892 - Trapping - Other**  
IBR Code  
IBR Group  
Crime Against  
Using  
Criminal Activity

Location **10 - Field/Woods**  
Offense Completed? **Yes**  
Hate/Bias **None (No Bias)**  
Domestic Violence **No**  
Weapons/Force

No. Prem. Entered  
Entry Method  
Type Security  
Tools Used

## Other Entity: O1 -- [REDACTED]

Entity Code **O1**  
Entity Type **Complainant**

Name [REDACTED]  
AKA [REDACTED]  
Alert(s)  
Address [REDACTED]  
CSZ [REDACTED]  
Home Phone [REDACTED]  
Work Phone [REDACTED]  
Attire

DOB [REDACTED]  
Age [REDACTED]  
Sex [REDACTED]  
Race [REDACTED]  
Ethnicity [REDACTED]  
Ht.  
Wt.  
Eye Color  
Hair Color  
Facial Hair  
Skin

Place of Birth  
SSN  
DLN  
DLN State  
DLN Country  
Occupation/Grade  
Employer/School  
Res. County [REDACTED]  
Res. Country **United States of America**  
Resident Status **R - Resident**

Entity Notes **Trapper who caught lynx.**

## Lynx Incidental Capture Report

Report No. 2013-TRP001

Lynx ID: LIC30

Name of Individual Reporting Capture: [REDACTED]

Name of Biologist/Warden Responding to Report: District Warden Jim Davis, Biologists Jen Vashon, Scott McLellan, and Mark Caron

Type of Capture: Trap

*Set type:* Dirt hole or scent post

*Trap type and size:* Foothold - #2 North Woods - 2 coils, plain jaw

*Jaw spread and swivels:* 5 ¼ inches, 2 swivels

*Staking:* staked-bullet, chain mounted on the side, short chain less than 12 inches

*Bait:* maybe beaver (if dirt hole)

*Lure:* fox urine (if scent post)

*Visibility of Bait:* None

*Legal Set?* Yes

Location of Capture: Grindstone, White Pine Rd (local name)

Wildlife Management District: 10

GPS Coordinates (UTM preferred): 525304, 5061573

GPS Map Datum (NAD 83 preferred): NAD 83

Date of Capture: 10/21/13

Disposition of Lynx: Alive, small laceration, sedated, treated, and released on-site

Age/Sex: Subadult female; 17.6 lbs

### **Description of events**

**Response:** At 0800, Warden Jim Davis responded to the call from trapper that he caught a lynx. Wdn Davis called the lynx hotline to report the capture and initiate a response. Biologist Jen Vashon notified USFWS Special Agent Eric Holmes. MDIFW biologists Jen Vashon, Scott McLellan, John DePue, Mark Caron and Wdn. Davis responded. The animal was sedated, examined for injuries and given supportive care (hydrating fluids, antibiotics, and small injury was treated following established procedures) before being released on-site. Wdn. Davis examined the trap and interviewed the trapper for compliance with State trapping laws. The set was legal.

**Weather conditions:** Overnight: 48 degrees F with clear skies. Daytime: 60 degrees F with clear skies.

**Disturbance:** None reported or observed at site

**Assessment of the lynx:** The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, and torso were normal. Extremities: A signal drop of blood and small laceration (shallow, < ½ cm in length) dorsally on the left front capture foot was observed. Body temperature was normal. No broken, chipped, or missing teeth. The animal was a healthy suadult female and weighed 17.6lbs. The animal was given antibiotics, hydrating fluids, and a small wound on the capture foot was treated. The animal was weighed and measured, ear tagged, and DNA samples were collected. The lynx was given an injection of yohimbine to reverse the effects of the sedative and observed during recovery in a portable dog crate. Upon recovery, although the lynx quickly walked away into cover, she appeared to be putting full-weight on all four legs.

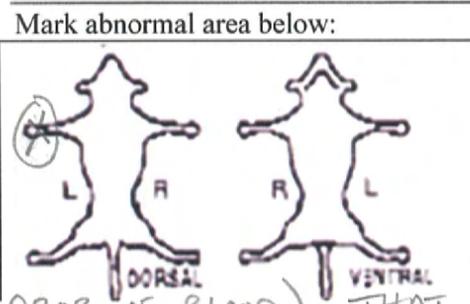
See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information.  
Report prepared by: Jennifer Vashon 10/31/13;

DATE: 10-21-13  
 Observers: Mark Caron, Jen V. Scott, Mac, John DePue, Scott Mac  
 Recorder: John DePue / Scott Mac Town: GRINDSTONE TWP.  
 Road Name: "WHITE PINE RD" OFF HUBER RD. County: PENNSCOA CO.  
 UTMe 525304 UTMn 504573 Datum: WGS84 NAD27 NAD83  
 Lynx ID# L1C30  
 Time when manageable: 1205h  
 Time of recovery/release: 1313

|                      | Ketaset Concentration | Xylazine Concentration | Time | Delivery Method | Additional Drug (If Needed)     | Amount       |
|----------------------|-----------------------|------------------------|------|-----------------|---------------------------------|--------------|
| 1 <sup>st</sup> Dose | 0.50 ml               | 0.05 ml                | 1134 | Syringe Pole    | Antibiotic (SCorIM) 0.5cc/10lbs | 0.75cc       |
| 2 <sup>nd</sup> Dose | 0.25 ml               | 0.025 ml               | 1157 | SYRINGE POLE    | Yohimbine (IVorIM) 0.5cc/20lbs  | 0.5cc - 1249 |
| 3 <sup>rd</sup> Dose |                       |                        |      |                 | Midazolam (IVorIM) 0.5cc/slowly |              |
| 4 <sup>th</sup> Dose |                       |                        |      |                 | Epinephrine (SCorIM) 0.5cc/10lb |              |
| Comments:            |                       |                        |      |                 | Doxapram (IVorSL) 1.0cc/22lbs   |              |

Sex: M  F  Estimated Age: Kitten  Subadult  Adult  Year Born (if known) 2012 est  
 Ear Tag# (Left) 240 (Right) 240 Tag Color: YELLOW

**Subjective (Body Condition):**  
 Poor  Fair  Good  Excellent   
**Objective** Normal  Abnormal   
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities



| Body Temperature   | Time  |
|--------------------|-------|
| Normal - 101-102.5 |       |
| 102.7 F            | 1210h |
| 102.8 F            | 1214h |
| 102.9 F            | 1218h |
| 102.3 F            | 1220h |
| 102.3              | 1230  |

**Assessment:** TINY LACERATION (1 DROP OF BLOOD) THAT WAS VERY DIFFICULT TO FIND - shallow 1/2 the size of a pea - very mild injury - photo/swelling  
**Plan:** Release/no sedation Sedation: Treat in field IRRIGATE + ANTIBIOTICS + SQ FLUIDS Sedate/Transport to Vet Euthanize

**Teeth:** Normal  Missing  Broken  Worn  Describe: \_\_\_\_\_ Photo? side view (2) / front view  
**Coat Condition:** Prime  Summer  Shedding  Mange  Bare/Worn  Describe: \_\_\_\_\_  
**Capture Foot?** Left Front  Right Front  Left Rear  Right Rear   
**Capture Foot Injuries:** Yes or No Describe: see assessment

| BODY MEASUREMENTS                                                                                  |            | LYNX IDENTIFICATION                                                                                                                                                                                                                  |                   |                            |                                    |
|----------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------|------------------------------------|
| Weight (Actual or Estimate)                                                                        | 17.6 lbs   | Lynx                                                                                                                                                                                                                                 |                   | Bobcat                     |                                    |
| Total Length                                                                                       | 780 mm     | Tail Banding Pattern                                                                                                                                                                                                                 | No Bands          | 1 Band                     | 2 Bands 3 Bands                    |
| Chest Girth                                                                                        | 380 mm     | Color of tip of tail                                                                                                                                                                                                                 | Completely Black  | Black on top/white beneath |                                    |
| DNA Sample: Yes No                                                                                 |            | Hind Foot Coloration                                                                                                                                                                                                                 | Grey              | Dark Brown                 |                                    |
| Hair Blood Tissue                                                                                  | Mouth Swab | Ear Tuft Length                                                                                                                                                                                                                      | >1 inch           | <1 inch                    |                                    |
| Parasites: Yes No                                                                                  |            | Toe Coloration (circle white toes)                                                                                                                                                                                                   | Left Front (IMMO) | Right Front (IMMO)         | Left Rear (IMMO) Right Rear (IMMO) |
| Sparse Abundant                                                                                    | Sample Y N | Radio Collared: Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Initial/Previously Collared Collar Works: Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Make: <u>LT Sirtrack ATS</u> GPS SAT VHF |                   |                            |                                    |
| Frequency: _____ Replacement Collar Freq: _____ Collar Life: _____ months Leather Circum: _____ mm |            |                                                                                                                                                                                                                                      |                   |                            |                                    |

Comments: \_\_\_\_\_  
 Photos?  YES NO Photo Number \_\_\_\_\_ Reviewed Data Sheet?  YES NO

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER \*advise caller to minimize disturbance to the animal\*

Date 10/21/13 Time 0800 IFW Staff collecting caller info: Jim Davis  
 Trapper/Individual Reporting [Redacted]  
 Address [Redacted] Phone number: [Redacted]  
 Town: [Redacted] **LYNX ID (w/o disturbing cat)**  
 Location: White Pine Rd - Local name Blacktip tail  Yes  No  
 GPS coordinates 525304 E 5061573 N Spotted  Yes  No  
 GPS datum WGS84 NAD27 NAD83 Eartufts  Yes  No  
 Directions and meeting time: Huber Chip Mill - Dobay Large feet  Yes  No  
Xcross track - 1st rgt - mile 3 - left hand fork - Scudder Grey legs  Yes  No

Circle all info that applies

Type of trap?  Foot-hold  Conibear  Cage Animal still in trap?  Yes  No 3 miles  
 When was trap last tended? 10/20 2pm/set  Alive  Dead  
 Staking of Trap?  Staked  Drag  Bullet Lynx appear injured?  Yes  No  
 Is animal entangled?  Yes  No Animal's Behavior  Calm  Sleeping  Pacing  
 Disturbance at the site?  Yes  No Other: \_\_\_\_\_  
 Type of Disturbance:  Vehicle traffic  Hunters  Equipment operation  Animal disturbance  
 Current weather?  Clear  Rain  Snow  Windy Current temperature? 60°F  
 Overnight weather?  Clear  Rain  Snow  Windy Overnight temperature? 48°F

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation?  Yes  No  
 Unresponsive?  Yes  No  
 Broken bones?  Yes  No If yes, Compound non-compound  
 Bleeding?  Yes  No If yes, minor Major  
 Laceration?  Yes  No If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb?  Yes  No

## 5. Information when ON-SITE: Circle all information that applies

Conibear 110 120 160 220 Other: \_\_\_\_\_  
 Foothold trap type #1.75 #2 NW #3 MB 450 MB 550 Other: Chain mounted on side of trap - not under logs  
 Inside jaw spread 5 1/4 inches Number of Swivels? 2  
 Jaw type Padded Laminated Offset - Plain jaw Number of coils: 2  
 Securing method  Staked  Drag Chain length: < 12" In-line spring? Yes  No  
 Bait? Yes  No Type: Manure - beaver if dirt hole Visible? Yes  No  
 Lure?  Yes  No Type: Scent post / fox urine Legal Set?  Yes  No

All people present 1 [Redacted] 2 Jim Davis 3 Scott McLellan  
 4 John DePue 5 [Redacted] 6 Tenelashan 7 \_\_\_\_\_

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured?  Y/N Euthanized?  Y/N Taken to veterinarian?  Y/N  
 Name & Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_

Comments:

# Maine Warden Service Investigation Report

Case No. **WS13-022763**

Report No. **WS13-022763.1**

Report Date: **10/21/2013 8:04:12 AM**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

**1**

Page 1 of 5

Subject: **6780 - Endangered/Threatened Species**

Case Report Status **A - Approved**  
Occurred On (and Between) **10/21/2013 7:45:00 AM**  
Location of Incident **lat 45.649 lon -68.688; millinocket, huber rd**  
Grid **10343 - Millinocket**  
Call Source **Phone**

Date Entered **10/22/2013 10:27:01 AM**  
Entered By **11184 - Davis, Jim**  
Date Verified  
Verified By  
Date Approved **11/1/2013 3:10:45 PM**  
Approved By **10321 - Scott, Dan**

Reporting Officer  
**11184 - Davis, Jim**

Connecting Cases Disposition **Not a Crime/Other Service**

Clearance Reason  
Date of Clearance  
Reporting Agency **Maine Warden Service**  
Division **MWS - Section 13**  
Notified

Date/Time Submitted  
**10/22/2013 10:40:21 AM**  
Assisted By

Vehicle Activity  
Vehicle Traveling  
@ Cross Street

Geo Code **10726 - GRINDSTONE TWP**

Local Geo Code

Entry Method  
Entry Point  
Suspect Vehicle Color  
Report Narrative

Suspect Actions(MO)  
Entry Direction  
Suspect Vehicle Body Style

I received a call from Dept of Public Safety in Houlton. [REDACTED] was reporting he caught a lynx in T1-R7 of the Huber Rd. I notified Jenn Vashon and Sgt. Dunham. I arrived on scene at approximately 9 am. I spoke with [REDACTED] and we checked the lynx it was resting and undisturbed. The lynx was caught high on the left front foot. Jenn Vashon, John Depue, Mark Caron, and Scott Mclellan arrived. They tranquilized the lynx inspected it for damage, and took vital info. I took photos of the scene, trap, site, and lynx. Trap was a northwoods #2 with a 5 1/4 inch inside jaw spread. There were 2 swivels. There wasn't any exposed bait at the site. No Prosecution warranted. Lynx revived at approximately 1 pm. Lynx walked away. Jenn Vashon and I completed the incident capture of lynx report. Vashon said she would see to it that it was properly filed.

## Offense Detail: 6892 - Trapping - Other

Offense Description **6892 - Trapping - Other**  
IBR Code  
IBR Group  
Crime Against  
Using  
Criminal Activity

Location **10 - Field/Woods**  
Offense Completed? **Yes**  
Hate/Bias **None (No Bias)**  
Domestic Violence **No**  
Weapons/Force

No. Prem. Entered  
Entry Method  
Type Security  
Tools Used

## Suspect S1: MURPHY, SHAWN

Suspect Number **S1**  
Name [REDACTED]  
AKA  
Alert(s)  
Address [REDACTED]  
CSZ [REDACTED]  
Home Phone  
Work Phone

DOB [REDACTED]  
Age [REDACTED]  
Sex [REDACTED]  
Race **Unknown**  
Ethnicity **Unknown**  
Ht.  
Wt.  
Eye Color  
Hair Color  
Hair Style  
Hair Length  
Facial Hair  
Skin  
Build  
Teeth

Place of Birth  
SSN  
DLN  
DLN State  
DLN Country  
Occupation/Grade  
Employer/School  
Res. County  
Res. Country  
Resident Status **Resident**

Scars/Marks/Tattoos  
Suspect MO  
Other MO  
Attire  
Habitual Offender Status

# Maine Warden Service Investigation Report

Case No. **WS13-022763**  
Report No. **WS13-022763.1**  
Report Date: **10/21/2013 8:04:12 AM**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

# 2

Page 2 of 5

MAINE Suspect  
Descriptor  
Suspect Notes

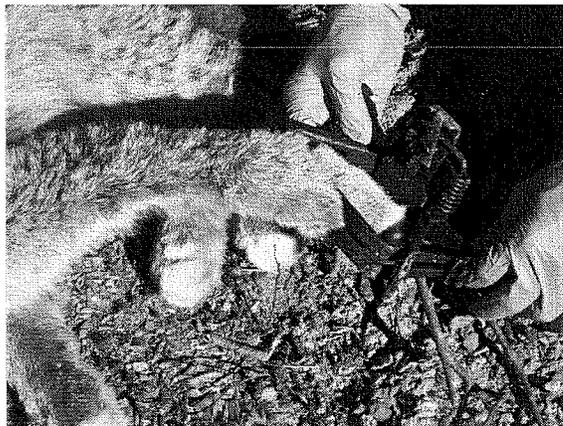
TRAPPING LICENSE # [REDACTED]

## Property Description Item 1: 1303 - Photograph - TRAP ON LYNX FOOT

Item No. **1**  
Property Category **1303 - Photograph**  
IBR Type **27 - Recordings-Audio/Visual**  
UCR Type **TV's, Radios, Stereos, Etc...**  
Status **Information Only**

Count **1**  
Value  
Manufacturer  
Model  
Serial No.  
License No.  
Color  
Description **TRAP ON LYNX FOOT**  
Vehicle Year  
License Year  
State  
Body Style

Recovered Date  
Owner  
Disposition  
Evidence Tag  
Alert(s)



|               |
|---------------|
| Drug Type     |
| Drug Quantity |
| Drug Measure  |

Property Notes

# Maine Warden Service Investigation Report

Case No. **WS13-022763**

Report No. **WS13-022763.1**

Report Date: **10/21/2013 8:04:12 AM**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

# 3

Page 3 of 5

## Property Description Item 2: 1303 - Photograph - TRAP JAW SPREAD

Item No. **2**  
Property Category **1303 - Photograph**  
IBR Type **27 - Recordings-Audio/Visual**  
UCR Type **TV's, Radios, Stereos, Etc...**  
Status **Information Only**

Count **1**

Value

Manufacturer

Model

Serial No. **JAW SPREAD OF TRAP**

License No.

Color

Description **TRAP JAW SPREAD**

Vehicle Year

License Year

State

Body Style

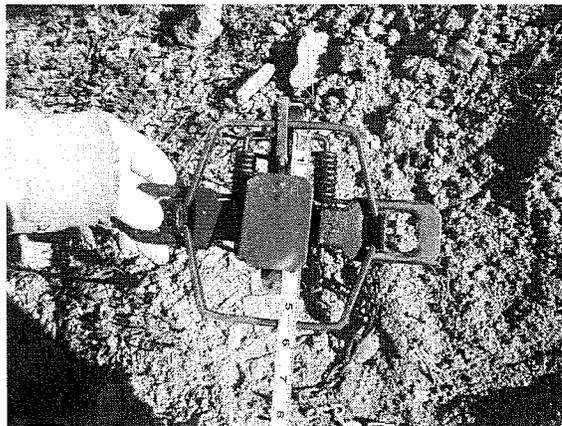
Recovered Date

Owner

Disposition

Evidence Tag

Alert(s)



Drug Type

Drug Quantity

Drug Measure

Property Notes

# Maine Warden Service Investigation Report

Case No. **WS13-022763**

Report No. **WS13-022763.1**

Report Date: **10/21/2013 8:04:12 AM**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

# 4

Page 4 of 5

## Property Description Item 3: 1303 - Photograph - SWIVELS ON TRAP

Item No. **3**  
Property Category **1303 - Photograph**  
IBR Type **27 - Recordings-Audio/Visual**  
UCR Type **TV's, Radios, Stereos, Etc...**  
Status **Information Only**

Count **1**

Value

Manufacturer

Model

Serial No.

License No.

Color

Description **SWIVELS ON TRAP**

Vehicle Year

License Year

State

Body Style

Recovered Date

Owner

Disposition

Evidence Tag

Alert(s)



Drug Type  
Drug Quantity  
Drug Measure

Property Notes

# Maine Warden Service Investigation Report

Case No. **WS13-022763**

Report No. **WS13-022763.1**

Report Date: **10/21/2013 8:04:12 AM**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

# 5

Page 5 of 5

## Property Description Item 4: 1303 - Photograph - TRAP SITE

Item No. **4**  
Property Category **1303 - Photograph**  
IBR Type **27 - Recordings-Audio/Visual**  
UCR Type **TV's, Radios, Stereos, Etc...**  
Status **Information Only**

Count **1**  
Value  
Manufacturer  
Model  
Serial No.  
License No.  
Color  
Description **TRAP SITE**  
Vehicle Year  
License Year  
State  
Body Style

Recovered Date  
Owner  
Disposition  
Evidence Tag  
Alert(s)



Drug Type  
Drug Quantity  
Drug Measure

Property Notes

**Lynx Incidental Capture Report**

**Report No. 2012-TRP002**

**Lynx ID: unknown, but  
yellow tags in each ear**

**Name of Individual Reporting Capture:** [REDACTED]

**Name of Biologist/Warden Responding to Report:** John DePue (lynx hotline) and Wdn John Lonergan

**Type of Capture:** Trap

*Set type:* dirthole

*Trap type and size:* 165 Bridger offset, laminated jaws

*Jaw spread and swivels:* 5 “ and 2 in-line swivels and shock spring

*Staking:* staked, short chain (disposable stake at site)

*Bait:* Yes, rotten caribou meat

*Lure:* Yes, Pro-choice

*Visibility of Bait:* No

*Legal Set?* The trapper had pulled the trap, but other traps were legally set.

**Location of Capture:** T7R17 Wels

**Wildlife Management District:** 4

**GPS Coordinates (UTM preferred):** N46°16.7297' , W69°57.1831;  
UTM-426575, 5125469

**GPS Map Datum (NAD 83 preferred):** WGS 84/NAD83

**Date of Capture:** 10/19/12

**Disposition of Lynx:** Alive, escaped trap when approached by trapper

**Age/Sex:** unknown; trapper noted yellow eartags, but didn't get close enough to read tag numbers

**Description of events**

**Response:** At 0730 on 10/19/2012, [REDACTED] contacted the lynx hotline to report a lynx that had escaped from his trap as he approached. This occurred at approximately 7 am in T7 R17Wels. Jen Vashon contacted Maine Warden Service to follow-up on the report. Wd. John Lonergan responded on 10/20/12 and although the trapper had pulled his set, Wdn. Lonergan checked nearby sets and interviewed the trapper and determined that the trap was legal.

**Weather conditions:** Daytime temperatures was 50 degrees F with clear skies.

**Disturbance:** Very little disturbance at set (ground scuffed up), no blood or fur.

**Assessment of the lynx:** Trapper reported that the lynx ran off with no obvious sign of injury and noted yellow eartags in each ear.

See attached check list for reporting lynx captures and WS Incident Card for more information.

Report prepared by: Jennifer Vashon 10/23/2012; update JHV (10/29/12)

Report reviewed & updated by: Wdn John Lonergan (10/28/12)

# Call For Service

CFS Number: **WS12-M08185**

Date: **10/19/2012**

## Call For Service

---

|                  |                         |                  |                                             |
|------------------|-------------------------|------------------|---------------------------------------------|
| CFS Number       | <b>WS12-M08185</b>      | Complainant      |                                             |
| Date             | <b>10/19/2012</b>       | Address          | <b>T7 R17</b>                               |
| Dispatcher       |                         | City, State, Zip |                                             |
| Call Source      | <b>C - Cellular</b>     | Phone            | ██████████                                  |
| Received         | <b>7:30:00 AM</b>       | Call type        |                                             |
| Dispatched       | <b>2:30:00 PM</b>       | Reported Offense | <b>6780 - Endangered/Threatened Species</b> |
| Arrived          |                         | Verified Offense | <b>6780 - Endangered/Threatened Species</b> |
| Cleared          | <b>6:20:00 PM</b>       | Tow Company      |                                             |
| Location         | <b>T7 R17</b>           | Vehicle          |                                             |
| City, State, Zip |                         | Vehicle License  |                                             |
| Jurisdiction     | <b>W12 - Section 12</b> | Disposition      | <b>1 - Active</b>                           |
| Grid             |                         | Priority         | <b>1 - One</b>                              |
| Sector           |                         | Classification   |                                             |
| Map              |                         | Agency           | <b>MWS - Maine Warden Service</b>           |
| X Coordinate     |                         | Case             | <b>WS12-M08185</b>                          |
| Y Coordinate     |                         | Reviewed On      |                                             |
| Reviewed By      |                         |                  |                                             |

### Officers

11604 - Lonergan, John

Notes Trapper ██████████ called the lynx hot line to report a lynx in one of his coyote traps.  
T7 R17

2233 Wdn Lonergan, 10 hours, 217 miles, responded the next day (10/20/12) to the area in an attempt to locate the trapper, did locate. Examined another set close by that held a coyote-no exposed bait, I measured a 5" inside jaw spread on a size 160 Bridger brand trap - at the dog, 2 in line swivels, an in line spring shock absorbing device was on the trap chain, chain was approx. 1 foot in length and was attached at the center of the trap frame. No violations detected. ██████████ gave me directions to the set that had caught the lynx and I responded there and examined the set area. Very little disturbance at set, appeared to be a dirt hole set with 3 flat rocks for backing. No sign of exposed bait at set, no blood observed.

# Maine Warden Service Investigation Report

Case No. **WS12-M08185**  
Report No. **WS12-M08185.1**  
Report Date: **10/19/2012**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

1

Page 1 of 2

Subject: **Lynx take 6780**

Case Report Status **S - Submitted**  
Occurred On **10/19/2012 7:00:00 AM**  
(and Between)  
Location of Incident **T7 R17**  
Grid

Date Entered **10/28/2012 11:17:35 AM**  
Entered By **11604 - Lonergan, John**  
Date Verified  
Verified By  
Date Approved  
Approved By  
Connecting Cases  
Disposition **Not a Crime/Other Service**  
Clearance Reason  
Date of Clearance  
Reporting Agency **Maine Warden Service**  
Division **MWS - Section 12**  
Notified  
Local Geo Code

Reporting Officer  
**11604 - Lonergan, John**

Date/Time Submitted  
**10/28/2012 12:10:24 PM**  
Assisted By

Call Source **Cellular**

Vehicle Activity  
Vehicle Traveling  
@ Cross Street

Geo Code **13X34 - T7-R17 WELS**

Entry Method  
Entry Point  
Suspect Vehicle  
Color  
Report Narrative

Suspect Actions(MO)  
Entry Direction  
Suspect Vehicle Body  
Style

10 hours, 212 miles driven, no violations detected or observed.

On October 19, 2012 at 0700 hrs [REDACTED], called in to the Maine Lynx hotline to report a lynx that had been caught in one of his coyote sets. The early fox and coyote trapping season had opened on October 14th. [REDACTED] reported that the lynx had pulled out of his foothold trap as he approached and had run off.

I responded to the scene as directed to do so by Warden Sgt. William Chandler on 10/20/2012, to see if I could locate the trapper in this remote area. I was able to locate [REDACTED] just as he was checking a trap set that held a coyote. (There is no cell phone communication in this area). This trap was close to the location of the trap set that had captured the lynx. I examined the set after [REDACTED] had removed the coyote and it was a legal set. Trap was a Bridger brand size 165, I measured the inside jaw spread at the dog and it measured 5 inches. I did not observe any exposed bait or attractors. The trap was fastened with a short chain that had two in line swivels and a spring shock absorbing device. The trap had offset jaws that were also laminated. The coyote had no blood or visible damage to its leg. [REDACTED] stated that he had been using rotted Caribou meat as bait in the dirt hole as well as Pro-choice coyote gland lure.

[REDACTED] stated to me that this was the same type of dirt-hole set that had captured the lynx. [REDACTED] also stated to me that he had observed two yellow ear tags (one in each ear) on the lynx as it had run away. [REDACTED] stated to me that he had not observed any indication of injury to the lynx.

I received directions from [REDACTED] to the set where the lynx had been taken, [REDACTED] had pulled the trap as he was leaving that day. I located the set location just off the Baker Lake Rd; there was the end of a disposable style trap anchor still embedded there as well as three flat rock that were used as a backing for what appeared to be a dirt-hole set. I did not observe any exposed bait or attractors, the ground there showed minor disturbance being scuffed up. I did not observe any blood or fur.

## Offense Detail: 6892 - Trapping - Other

Offense Description **6892 - Trapping - Other**  
IBR Code  
IBR Group  
Crime Against  
Using  
Criminal Activity

Location **10 - Field/Woods**  
Offense Completed? **Yes**  
Hate/Bias **None (No Bias)**  
Domestic Violence **No**  
Weapons/Force

No. Prem. Entered  
Entry Method  
Type Security  
Tools Used

## Other Entity: O1 -- [REDACTED]

Entity Code **O1**  
Entity Type **Complainant**

# Maine Warden Service Investigation Report

Maine Warden Service

284 State St  
Augusta, ME 04330  
207 287-2766

# 2

Page 2 of 2

Case No. **WS12-M08185**  
Report No. **WS12-M08185.1**  
Report Date: **10/19/2012**

Name [REDACTED]  
AKA [REDACTED]  
Alert(s) [REDACTED]  
Address [REDACTED]  
CSZ [REDACTED]

DOB [REDACTED]  
Age [REDACTED]  
Sex [REDACTED]  
Race [REDACTED]  
Ethnicity [REDACTED]

Place of Birth [REDACTED]  
SSN [REDACTED]  
DLN [REDACTED]  
DLN State **ME - Maine**  
DLN Country **USA - United States of America**

Home Phone [REDACTED]  
Work Phone [REDACTED]

Ht. [REDACTED]  
Wt. [REDACTED]  
Eye Color [REDACTED]  
Hair Color [REDACTED]  
Facial Hair [REDACTED]  
Skin [REDACTED]

Occupation/Grade [REDACTED]  
Employer/School [REDACTED]  
Res. Country **United States of America**  
Resident Status **R - Resident**

Attire [REDACTED]

Entity Notes [REDACTED]

# Check List for reporting and responding to an incidental capture of a lynx

## 1. Obtain information from CALLER

Date 10/19,2012 Time 700 IFW Staff collecting caller info: \_\_\_\_\_ lynx hotline  
 Trapper/Individual Reporting \_\_\_\_\_  
 Address \_\_\_\_\_ Phone number: \_\_\_\_\_

Circle all info that applies

Type of trap? Foot-hold When was trap last tended? 10/18/2012@11:00 AM  
 Animal still in trap? No Is animal entangled? No  
 Lynx injured? No  
 Animal's Behavior Pacing

Disturbance at the site? yes Other: very little sigghn of animal struggle  
 Vehcile traffic  
 \*advise caller to minimize disturbance to the animal \*

Current weather? Clear Current temperature? 50  
 Overnight weather? Clear Rain Snow Windy Overnight temperature? \_\_\_\_\_

Directions and meeting time:  
 T7 R 17

## 2. Contact IFW lynx hotline 592-4734 to inform lynx specialist/ Mammal Group

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. Inforamation when ON-SITE: Circle all inforamiton that applies

|                   |               |          |                                         |               |     |     |                    |       |
|-------------------|---------------|----------|-----------------------------------------|---------------|-----|-----|--------------------|-------|
| Size of trap      | #1.75         | #2       | #3                                      | 110           | 120 | 160 | 220                | 160   |
| Inside jaw spread | 5 inches      |          |                                         | Number of     | 2   |     |                    |       |
| Jaw type          | Laminated     | Offset   |                                         | Legal Set?    | Yes |     | All people present |       |
| Securing method   | Staked        | Drag     |                                         |               |     |     |                    |       |
| Bait? Yes         |               | Visible? | No?                                     |               |     |     |                    |       |
| Lure? Yes         |               | Type:    | rotten caribou meat and Pro-choice lure |               |     |     | 3                  | _____ |
| Town: T7 R 17     |               |          |                                         |               |     |     | 4                  | _____ |
| Location:         |               |          |                                         |               |     |     | 5                  | _____ |
| GPS coordinates   | N 46°16.7297' |          |                                         | W 069°57.1831 |     | N   | 6                  | _____ |
| GPS datum         | WGS84         |          |                                         |               |     |     | 7                  | _____ |

## 5. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation? Yes No  
 Unresponsive? Yes No  
 Broken bones? Yes No If yes, Compound non-compound  
 Bleeding? Yes No If yes, minor Major  
 Laceration? Yes No If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes No

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured? Y/N Euthanized? Y/N Taken to rehab. Center? Y/N  
 Name&Location of Rehab Center \_\_\_\_\_ Phone # \_\_\_\_\_

Comments: Trapper \_\_\_\_\_ observed a lynx in his coyote trap, as he approached the lynx pulled free of the trap and ran off with no observed injuries. The lynx had two yellow ear tags, one in each ear. \_\_\_\_\_ had already pulled the trap when I arrived the next day, however I did check one of his set that held a coyote at a location close to the set that caught the lynx, no observed violations. \_\_\_\_\_ gave directions to the set location where the lynx had been caught and I did not observe any violations there also. Traps used were 160 size Bridger brand traps, 5" inside spread, 2 swivels and an in line spring snook absorbing device were used on his traps.

**Lynx Incidental Capture Report**

**Report No. 2012-TRP009**

**Lynx ID: LIC28**

**Name of Individual Reporting Capture:** [REDACTED]

**Name of Biologist/Warden Responding to Report:** Biologists John DePue and Allen Starr, Wardens Charlie Brown and Ben Drew

**Type of Capture:** Trap

*Set type:* Dirthole

*Trap type and size:* #1.75

*Jaw spread and swivels:* 5 3/8" offset and 2 swivels

*Staking:* Drag; less than 8ft of chain

*Bait:* Yes;

*Lure:* Yes; Cronks Allagash Fur call

*Visibility of Bait:* No

*Legal Set?* Yes

**Location of Capture:** T6 R8 Wels; Hay Mountain Road

**Wildlife Management District:** 5

**GPS Coordinates (UTM preferred):** 520507, 5108556

**GPS Map Datum (NAD 83 preferred):** Nad83/WGS 84

**Date of Capture:** 11/5/12

**Disposition of Lynx:** Alive, sedated, and released on site

**Age/Sex:** male 27.6 lbs

**Description of events**

**Response:** At 0800 on 11/5/2012, a trapper called the lynx hotline to report the capture of a lynx in Hammond Twp. Wdn. Brown and Drew and biologists John DePue and Allen Starr responded. USFWS Special Agent Eric Holmes was notified of the capture. Wdn. Brown checked the set and interviewed the trapper and determined that the trap was legal. The lynx was sedated, examined for injuries, provided supportive care and released from the trap onsite.

**Weather conditions:** Daytime temperature was 33 degrees F with clear skies. Overnight temperature was 32 degrees F.

**Disturbance:** The trapper indicated that there was little traffic in the area and staff responding on scene indicated the lynx was undisturbed.

**Assessment of the lynx:** The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, torso, were found to be normal and extremities were found to be abnormal (a tiny laceration on ventral aspect of right rear capture foot too small to irrigate or aluspray). The animal was treated with antibiotics and subcutaneous fluids supportively. Body temperature was normal. The animal was a healthy male and weighed approximately 28lbs. Body measurements and DNA were collected and the animal was marked with one yellow

ear tag in its right ear. The lynx was given an injection of yohimbine to reverse the effects of the sedative (xylazine) and observed during recovery in a portable dog crate. Upon recovery, the animal was observed putting full weight on the capture foot at release.

See attached check list for reporting lynx captures and WS Incident Card for more information.

Report prepared & updated by: Jennifer Vashon 11/13/12 and 11/16/12

Report reviewed by: John DePue 11/16/12, Charlie Brown 11/16/12

# Call For Service

CFS Number: **WS12-015411**

Date: **11/5/2012 8:29:47 AM**

## Call For Service

---

CFS Number **WS12-015411**  
Date **11/5/2012 8:29:47 AM**  
Dispatcher  
Call Source **0 - Phone**  
Received **8:32:04 AM**  
Dispatched **8:32:08 AM**  
Arrived **12:00:00 AM**  
Cleared **11:30:15 AM**  
Location **T6 R8 Wels**  
City, State, Zip **T6 R8 WELS**  
Jurisdiction **W13 - Section 13**  
Grid **10790 - T6 R8 WELS**  
Sector **W769**  
Map  
X Coordinate **0518445**  
Y Coordinate **5112859**

Reviewed By

Complainant  
Address  
City, State, Zip  
Phone  
Call type  
Reported Offense **6780 - Endangered/Threatened Species**  
Verified Offense **6780 - Endangered/Threatened Species**

Tow Company  
Vehicle  
Vehicle License  
Disposition **3 - Pending Approval**  
Priority  
Classification

Agency **MWS - Maine Warden Service**  
Case  
Reviewed On

### Officers

11861 - Brown, Charles

Notes 2253//START ME A CARD FOR A TRAPPED LYNX  
Original Location : T6 R8 WELS

2253 Brown 60 miles 3 hours investigated trapped lynx caught by hind leg in foothold trap with drag, assist bio with incident no violation

# Check List for reporting and responding to an incidental capture of a lynx

## 1. Obtain information from CALLER

Date 11-5-12 Time 8:00 IFW Staff collecting caller info: J. Vashon  
 Trapper/Individual Reporting [Redacted]  
 Address [Redacted] Phone number: [Redacted]

Circle all info that applies

Type of trap?  Foot-hold  Conibear  
 Animal still in trap? Yes  No   
 Animal's Behavior Foot-hold Drag Jumped up  
 Calm  Sleeping  Pacing   
 When was trap last tended? 7:20am 11-4-12  
 Is animal entangled? Yes  No   
 Lynx injured? Yes  No  Hind leg left?

Disturbance at the site? Yes  No   
 Vehicle traffic  Human disturbance  Equipment operation  Animal disturbance   
 \*advise caller to minimize disturbance to the animal \*

Current weather? cloudy Funnies Clear  Rain  Snow  Windy  Current temperature? 33° F  
 Overnight weather? Clear  Rain  Snow  Windy  Overnight temperature? 32° F?

Directions and meeting time:  
Hay Lake Forest camp

## 2. Contact IFW lynx hotline 592-4734 to inform lynx specialist/ Mammal Group

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. Information when ON-SITE: Circle all information that applies

Size of trap  #1.75  #2  #3  110  120  160  220  Other: \_\_\_\_\_  
 Inside jaw spread 5 3/8 inches  
 Jaw type Padded  Laminated   Offset  
 Securing method Staked   Drag  
 Bait?  Yes  No Visible? Yes  No?   
 Lure?  Yes  No Type: cranks Allagash Fur call  
 Town: T6-R8  
 Location: Hay Mountain Road  
 GPS coordinates N 46° 07.8163' E W 068° 44.6721' N  
 GPS datum  WGS84  NAD27  NAD83 Drag less than 8 ft  
 All people present  
 1 [Redacted]  
 2 Ben Brown  
 3 Charlie Brown  
 4 John Deque  
 5 Alex Starr  
 6 \_\_\_\_\_  
 7 \_\_\_\_\_

## 5. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation?  Yes  No  
 Unresponsive? Yes  No   
 Broken bones? Yes  No  If yes, Compound  non-compound  
 Bleeding? Yes  No  If yes, minor  Major  
 Laceration? Yes  No  If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes  No

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured?  Y/N  Euthanized? Y/N  Taken to rehab. Center? Y/N   
 Name & Location of Rehab Center \_\_\_\_\_ Phone # \_\_\_\_\_

Comments: No injuries everything went well with handling and release.

DATE: 11-5-12 **Incidental Lynx Capture Form** Lynx ID# L1C28  
 Observers: Sasha Gowell  
 Recorder: J. DePue / Al star Town: T6 R3  
 Road Name: Hav Mountain Rd County: Pendeboscot  
 Time when manageable: 11:08  
 Time of recovery/ release: 1200 / 1210  
 UTM: 46°07.49.04 UTMn 68°44.4.14 Datum: WGS84 NAD27 NAD83

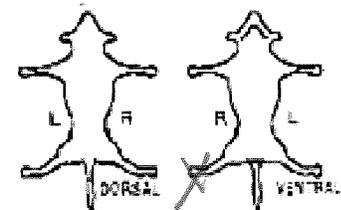
| Mix Used:            | Ketaset Concentration: | Xylazine Concentration: | 5:1 Ket/Xyl Concentration: | Time        | Delivery Method  | Additional Drug (If Needed)      | Amount      |
|----------------------|------------------------|-------------------------|----------------------------|-------------|------------------|----------------------------------|-------------|
| 1 <sup>st</sup> Dose | <u>200 mg/ml</u>       | <u>400 mg/ml</u>        | <u>mg/ml</u>               | <u>1058</u> | <u>Jab stick</u> | Antibiotic (SCorIM) 0.5cc/10lbs  | <u>1.5</u>  |
| 2 <sup>nd</sup> Dose |                        |                         |                            |             |                  | Yohimbine (IVorIM) 0.5cc/20lbs   | <u>0.75</u> |
| 3 <sup>rd</sup> Dose |                        |                         |                            |             |                  | Diazepam (IVorIM) 0.5cc/slowly   |             |
| 4 <sup>th</sup> Dose |                        |                         |                            |             |                  | Epinephrine (SCorIM) 0.02cc/20lb |             |
| Comments:            |                        |                         |                            |             |                  | Doxapram (IVorSL) 1.0cc/22lbs    |             |

35ml saline

Ear Tag#(Left) X (Right) 239 Tag Color: Yellow Green Red Other: \_\_\_\_\_  
**Radio Collared:** Y N **Initial/Previously Collared** **Collar Works:** Y N **Make:** LT Sirtrack ATS GPS SAT VHF  
 Radio Collar Frequency: \_\_\_\_\_ Replacement Collar Freq.: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months  
 Leather Circumference: \_\_\_\_\_ mm

**PHYSICAL INFORMATION**  
 Sex: (M) F Year Born (if known) \_\_\_\_\_  
 Estimated Age: Kitten Subadult (Adult)  
**Teeth:** Normal  Missing  Broken  Worn   
 Describe: \_\_\_\_\_  
 to of Teeth? side view (2) \_\_\_\_\_ front view \_\_\_\_\_  
**Coat Condition:** Prime  Summer   
 Shedding  Mange  Bare/Worn   
 Capture Foot? Front: L, R or Hind: L (R)  
 Capture Foot Injuries? Y (N)  
 Describe: tiny, barely noticable cut on 2<sup>nd</sup> to inside toe

**Subjective Body Condition:**  
 Poor  Fair  Good  Excellent   
**Objective** Normal Abnormal  
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities    
**Assessment:** tiny cut on side of capture foot - too small to irrigate or Allu spray  
**Plan:** Release/no sedation  
 Sedation: Treat in field or Transport to Vet;  
 Euthanize: Antibiotics & fluids



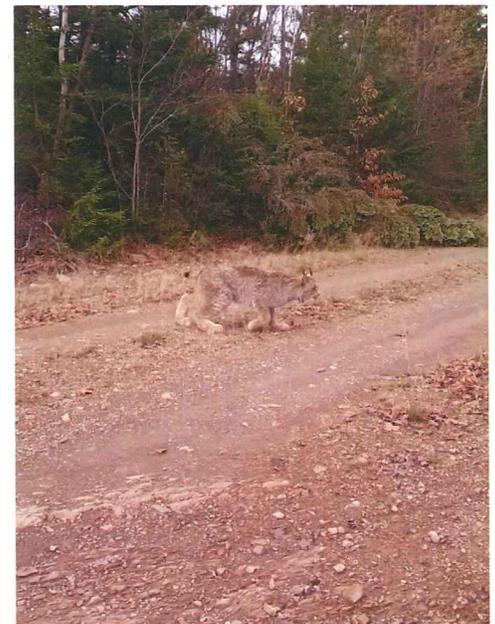
| Body Temp      | Time         |
|----------------|--------------|
| <u>100.9 F</u> | <u>11:18</u> |
| <u>100.1 F</u> | <u>11:25</u> |
| <u>99.8 F</u>  | <u>11:47</u> |
| F              |              |

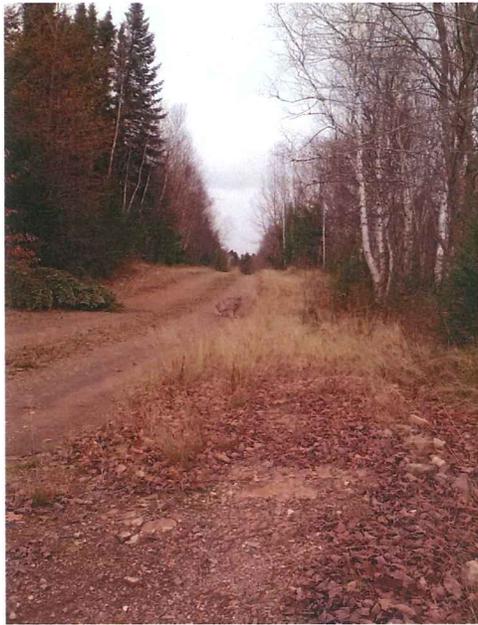
**BODY MEASUREMENTS**

|                             |                 |                             |                         |             |              |                            |
|-----------------------------|-----------------|-----------------------------|-------------------------|-------------|--------------|----------------------------|
| Weight (Actual or Estimate) | <u>27.6</u> lbs | <b>Tail Banding Pattern</b> | No Bands                | 1 Band      | 2 Bands      | 3 Bands                    |
| Neck Circumference          | mm              | <b>Color of tip of tail</b> | <u>Completely Black</u> |             |              | Black on top/white beneath |
| Chest Girth                 | mm              | <b>Hind Foot Coloration</b> | Dark Brown              | <u>Grey</u> | Other: _____ |                            |
| Shoulder Height             | mm              | <b>Toe Coloration</b>       | Inside                  | Middle      | Middle       | Outside                    |
| Tail Length (tip of bone)   | mm              | Left Front                  | <u>ALL BROWN</u>        |             |              |                            |
| Tail Length (tip of tail)   | mm              | <b>Right Front</b>          |                         |             |              |                            |
| Total Length                | mm              | Left Rear                   |                         |             |              |                            |
| Zygomatic Arch              | mm              | Right Rear                  |                         |             |              |                            |
| Ear Tuft Length             | mm              |                             |                         |             |              |                            |

Scars: Y N Description \_\_\_\_\_  
**DNA:** Hair Sample Y (N) **Parasites:** Y (N) Photos? YES NO Photo Number \_\_\_\_\_  
 Tissue Sample Y (N) **Sample:** Y (N) Reviewed Data Sheet? YES NO incrate  
 Blood Sample Y (N) Rare Light Common

Comments: recovered in dog crate till standing + bumping door





**Lynx Incidental Capture Report**

**Report No. 2012-TRP008**

**Lynx ID: LIC27**

**Name of Individual Reporting Capture:** [REDACTED]

Trapping for IFW deer yard predator program

**Name of Biologist/Warden Responding to Report:** Wdn Ben Drew, Biologists Jennifer Vashon and John DePue. Dr. Stuart Sherburne DVM

**Type of Capture:** Trap

*Set type:* Dirthole

*Trap type and size:* #3

*Jaw spread and swivels:* 5 1/4" and 2 swivels

*Staking:* Staked short chain (11.5")

*Bait:* Yes; bobcat meat

*Lure:* Yes

*Visibility of Bait:* No

*Legal Set?* Yes

**Location of Capture:** Hammond

**Wildlife Management District:** 6

**GPS Coordinates (UTM preferred):** 574892, 5124975

**GPS Map Datum (NAD 83 preferred):** Nad83

**Date of Capture:** 11/4/12

**Disposition of Lynx:** Alive, sedated, and released on site

**Age/Sex:** male 28 lbs

**Description of events**

**Response:** At 1130 on 11/4/2012, a trapper called the lynx hotline to report the capture of a lynx in Hammond Twp. Jen Vashon contacted Wdn. Ben Drew who was covering this area for Wdn Pelkey who was on days off. Wdn. Drew and biologists Jennifer Vashon, and John DePue, and Dr. Stuart Sherburne DVM responded. USFWS Special Agent Eric Holmes was notified of the capture. Wdn. Drew checked the set and interviewed the trapper and determined that the trap was legal. The lynx was sedated, examined for injuries, provided supportive care and released from the trap onsite.

**Weather conditions:** Daytime temperature was 37 degrees F with clear skies. Overnight temperatures were in the mid 30s.

**Disturbance:** Vehicle traffic was light on the adjacent two lane dirt road. The lynx was in a trap ~100 m from the main road on an old road/trail without vehicle traffic.

**Assessment of the lynx:** The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, torso, were found to be normal and extremities were found to be abnormal (a small laceration ~1/8" on dorsal aspect of right front capture foot and mild swelling). Laceration was through the first layer of skin. The animal was treated with antibiotics and subcutaneous

fluids supportively; wound care consisted of thorough irrigation and topical treatment of aluspray. Body temperature was normal. The animal was a healthy male and weighed 28lbs. Dr. Sherburne concurred with our injury assessment and treatment, and noted that the laceration was minor. Body measurements and DNA were collected and the animal was marked with yellow eartags in each ear. The lynx was given an injection of yohimbine to reverse the effects of the sedative (xylazine) and observed during recovery in a portable dog crate. Upon recovery, the animal applied its full weight on the capture foot and had good coordination when released (easily navigated a wet ditch).

See attached check list for reporting lynx captures and WS Incident Card for more information.

Report prepared & updated by: Jennifer Vashon 11/8/12 and 11/15/12  
Report reviewed by: Dr. Sherburne (11/14/12) and Wdn Ben Drew

# Call For Service

CFS Number: **WS12-015355**

Date: **11/4/2012 1:01:00 PM**

## Call For Service

---

|                  |                             |                  |                                   |
|------------------|-----------------------------|------------------|-----------------------------------|
| CFS Number       | <b>WS12-015355</b>          | Complainant      | <b>DREW, BEN</b>                  |
| Date             | <b>11/4/2012 1:01:00 PM</b> | Address          | <b>Tc R2 Wels</b>                 |
| Dispatcher       |                             | City, State, Zip |                                   |
| Call Source      | <b>0 - Phone</b>            | Phone            | <b>207 532-5400</b>               |
| Received         | <b>1:01:50 PM</b>           | Call type        |                                   |
| Dispatched       | <b>1:01:53 PM</b>           | Reported Offense | <b>6892 - Trapping - Other</b>    |
| Arrived          | <b>12:00:00 AM</b>          | Verified Offense | <b>6892 - Trapping - Other</b>    |
| Cleared          | <b>1:02:18 PM</b>           | Tow Company      |                                   |
| Location         | <b>Tc R2 Wels</b>           | Vehicle          |                                   |
| City, State, Zip | <b>TC R2 WELS</b>           | Vehicle License  |                                   |
| Jurisdiction     | <b>W14 - Section 14</b>     | Disposition      | <b>1 - Active</b>                 |
| Grid             | <b>02752 - TC R2 WELS</b>   | Priority         |                                   |
| Sector           |                             | Classification   |                                   |
| Map              |                             | Agency           | <b>MWS - Maine Warden Service</b> |
| X Coordinate     | <b>0579295</b>              | Case             |                                   |
| Y Coordinate     | <b>5129890</b>              | Reviewed On      |                                   |
| Reviewed By      |                             |                  |                                   |

### Officers

10313 - Drew, Benjamin

Notes CALLER IS [REDACTED] ON TWIN BROOK RD ACCIDENTALY LYNX CAPTURE.  
CLOSE OUT Trapping OTHER.  
Original Location : TC R2 WELS

2252 Drew: Received call from Jen Vachon (at approx. 1215 hrs), reference an accidental lynx capture by [REDACTED] (trapper) off the Twin Brook Road in TCR2. She advised me she would like a warden to respond to check trapping compliance and that she would be heading north immediately with other biological staff. I then met [REDACTED] near the site where the lynx was located and I waited with him. The lynx was off the Twin Brook Rd (secondary road) on the edge of a small grassy road and was lying down. Biological staff arrived around 1530 and I assisted them by measuring the trap, inspecting the set, and everything was legal. I finished up at the scene a little after 1700 hrs. closed/ 5 hrs/ 40 miles

# FORM FOR REPORTING & RESPONDING TO INCIDENTAL CAPTURES OF LYNX

**1. Obtain information from CALLER**

Date 11/4/2017 Time 1130 IFW Staff collecting caller info: John DePue  
 Trapper/Individual Reporting \_\_\_\_\_  
 Address \_\_\_\_\_ Phone number: \_\_\_\_\_

Circle all info that applies

Type of trap?  Foot-hold  Conibear  
 Animal still in trap?  Yes  No  
 Animal's Behavior  Calm  Sleeping  Pacing

When was trap last tended? \_\_\_\_\_  
 Is animal entangled? Yes  No   
 Lynx injured? Yes  No

Disturbance at the site?  Yes  No  
 Vehicle traffic  Human disturbance  
 Other: limited - on spur road off major road w/ vehicle to the - no vehicles driving by eat, but on nearby road.  
 Equipment operation  Animal disturbance

\*advise caller to minimize disturbance to the animal\*

Current weather? Clear  Rain  Snow  Windy   
 Overnight weather? Clear  Rain  Snow  Windy  Current temperature? 37  
 Overnight temperature? \_\_\_\_\_

Directions and meeting time: \_\_\_\_\_

**2. Contact IFW lynx hotline 592-4734 to inform lynx specialist/ Mammal Group**

**3. At the site minimize disturbance (crowd and/or traffic control)**

**4. Information when ON-SITE:** Circle all information that applies

Size of trap #1.75  #2  #3  110  120  160  220  Other: \_\_\_\_\_

Inside jaw spread 11.5 inches 5 1/4" Number of Swivels? 2  
 Jaw type rag Padded  Laminated  Offset   
 Securing method Staked  Drag   
 Bait?  Yes  No Visible? Yes  No?  bobcat meat  
 Lure?  Yes  No Type: airthole airthole  
 Town: Hammond Twp  
 Location: Twin Brook Rd (spur - on S. side of Rd)  
 GPS coordinates 46°16.4532 E 68°1.6797 N  
 GPS datum WGS84 NAD27 NAD83 57

All people present  
 1. \_\_\_\_\_  
 2. Mr. Ben Brown  
 3. Ten Vashon  
 4. John DePue  
 5. Dr. Stu Sherburne DVM  
 6. \_\_\_\_\_  
 7. \_\_\_\_\_

**5. At the site: Assess the ANIMAL prior to chemical immobilization**

Animal entangled in vegetation? Yes  No   
 Unresponsive? Yes  No   
 Broken bones? Yes  No  If yes, Compound non-compound  
 Bleeding? Yes  No  If yes, minor Major  
 Laceration? Yes  No  If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes  No

**6. Anesthesia (follow protocol and complete capture form)**

**7. Action Taken:**

Release uninjured?  Y  N Euthanized?  Y  N Taken to rehab. Center?  Y  N  
 Name & Location of Rehab Center \_\_\_\_\_ Phone # \_\_\_\_\_

Comments: \_\_\_\_\_

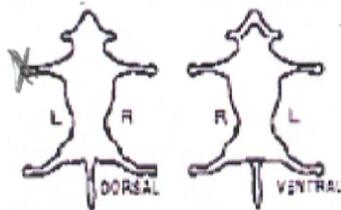
DATE: 11-4-12 **Incidental Lynx Capture Form** Lynx ID# LIC27  
 Observers: S. Sherburne, Weston, B. Drey  
 Recorder: J. DePre Town: Hammond Time when manageable: 1540  
 Road Name: Twain brake Rd County: Arcosteeh Time of recovery/ release: ~1640  
 UTMe 46° 45' 32 UTMn 68° 16' 79 Datum: (WGS84) NAD27 NAD83

| Mix Used:            | Ketaset Concentration: | Xylazine Concentration: | 5:1 Ket/Xyl Concentration: | Time | Delivery Method | Additional Drug (If Needed)     | Amount     |
|----------------------|------------------------|-------------------------|----------------------------|------|-----------------|---------------------------------|------------|
| 1 <sup>st</sup> Dose | .7 ml                  | .14 ml                  | ml                         | 1533 | Jab - RR        | Antibiotic (SCorIM) 0.5cc/10lbs | 1.5cc      |
| 2 <sup>nd</sup> Dose | ml                     | ml                      | ml                         |      |                 | Yohimbine (IVorIM) 0.5cc/20lbs  | 0.75-1.6cc |
| 3 <sup>rd</sup> Dose | ml                     | ml                      | ml                         |      |                 | Midazolam (IVorIM) 0.5cc/slowly |            |
| 4 <sup>th</sup> Dose | ml                     | ml                      | ml                         |      |                 | Epinephrine (SCorIM) 0.5cc/10lb |            |
| Comments:            |                        |                         |                            |      |                 | Doxapram (IVorSL) 1.0cc/22lbs   |            |

Ear Tag#(Left) 227 (Right) 227 Tag Color: Yellow Green Red Other: \_\_\_\_\_  
**Radio Collared:** Y (N) **Initial/Previously Collared** Collar Works: Y N **Make:** LT Sirtrack ATS GPS SAT VHF  
 Radio Collar Frequency: \_\_\_\_\_ Replacement Collar Freq.: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months  
 Leather Circumference: \_\_\_\_\_ mm

**PHYSICAL INFORMATION**  
 Sex: (M) (F) Year Born(if known) \_\_\_\_\_  
 Estimated Age: Kitten Subadult (Adult)  
**Teeth:** Normal  Missing  Broken  Worn   
 Describe: \_\_\_\_\_  
 Photo of Teeth? side view (2) \_\_\_\_\_ front view \_\_\_\_\_  
**Coat Condition:** Prime  Summer   
 Shedding  Mange  Bare/Worn \_\_\_\_\_  
 Capture Foot? Front: L, R or Hind: L, R  
 Capture Foot Injuries? Y N  
 Describe: \_\_\_\_\_

**Subjective Body Condition:**  
 Poor  Fair  Good  Excellent   
**Objective Normal Abnormal**  
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities    
**Assessment:** laceration on capture foot - dorsal left front  
**Plan:** Release/no sedation, Euthanize  
 Sedation: Treat in field, or Transport to Vet; irrigate laceration, a lusepray, antibiotic & fluids

Mark abnormal area below:  
  
**Normal - 101-102.5**  

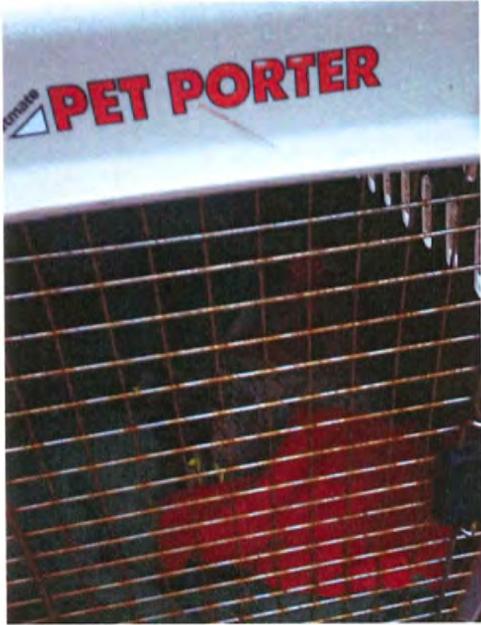
| Body Temp | Time |
|-----------|------|
| 102.1 F   | 1545 |
| 100.9 F   | 1555 |
| F         |      |
| F         |      |
| F         |      |

**BODY MEASUREMENTS**

| Weight (Actual or Estimate) | Tail Banding Pattern | No Bands                     | 1 Band | 2 Bands                    | 3 Bands |
|-----------------------------|----------------------|------------------------------|--------|----------------------------|---------|
| <u>28</u> lbs               |                      |                              |        |                            |         |
| Neck Circumference          | Color of tip of tail | Completely <u>Black</u>      |        | Black on top/white beneath |         |
| Chest Girth                 | Hind Foot Coloration | Dark Brown Grey Other: _____ |        |                            |         |
| Shoulder Height             | Toe Coloration       | Inside                       | Middle | Middle                     | Outside |
| Tail Length (tip of bone)   | Left Front           | <u>All Brown</u>             |        |                            |         |
| Tail Length (tip of tail)   | Right Front          |                              |        |                            |         |
| Total Length                | Left Rear            |                              |        |                            |         |
| Zygomatic Arch              | Right Rear           |                              |        |                            |         |
| Ear Tuft Length             |                      |                              |        |                            |         |

Scars: Y (N) Description \_\_\_\_\_  
**DNA:** Hair Sample Y (N) Tissue Sample Y (N) Blood Sample Y (N)  
**Parasites:** Y (N) Sample: Y (N) Rare Light Common  
 Photos? YES NO Photo Number J. Vashon  
 Reviewed Data Sheet? YES NO

Comments: put cat in dog cage to recover because of water + cold



**Lynx Incidental Capture Report**

**Report No. 2012-TRP004**

**Lynx ID: LIC24**

**Name of Individual Reporting Capture:** [REDACTED]

Trapping for IFW deer yard predator program

**Name of Biologist/Warden Responding to Report:** Wdn Paul Farrington, Biologists Alan Starr and Mark Caron

**Type of Capture:** Trap

*Set type:* Dirthole

*Trap type and size:* No 2 4-coil

*Jaw spread and swivels:* 4 7/8" swivels – 2 at the base and 1 in-line

*Staking:* Drag

*Bait:* Yes

*Lure:* Yes

*Visibility of Bait:* No, dirthole set

*Legal Set?* Yes

**Location of Capture:** Bull Brook Rd, Lambert Lake Township

**Wildlife Management District:** 19

**GPS Coordinates (UTM preferred):** 613125, 5035049

**GPS Map Datum (NAD 83 preferred):** WGS 84/Nad83

**Date of Capture:** 10/21/12

**Disposition of Lynx:** Alive, sedated, and released on site

**Age/Sex:** Female 17.5lbs

**Description of events**

**Response:** At 1425, a trapper called 911 to report the capture of a lynx in a trap in Lambert Lake Twp. Wdn. Paul Farrington was notified and contacted John DePue on the lynx hotline. The lynx had just been caught (the drag was still at the trap site when the trapper checked the trap). Wdn. Paul Farrington and biologists Mark Caron and Alan Starr responded. USFWS Special Agent Eric Holmes was notified of the capture. Wdn. Farrington checked the set and interviewed the trapper and determined that the trap was legal. The lynx was sedated, examined for injuries, provided supportive care and released from the trap onsite.

**Weather conditions:** Daytime temperatures was 50 degrees F with clear skies. Animal caught approximately 2pm; overnight temperatures not applicable.

**Disturbance:** No vehicle traffic in the area when staff was on-site and trapper reported very little activity in the area on a Sunday (no hunting).

**Assessment of the lynx:** The animal was caught in a drag set and the drag was entangled in vegetation at the edge of the road. The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, torso, and extremities were normal. Body temperature was normal. The top

left canine was broken, but was an old injury and was not related to the capture. No swelling or other injuries on the capture foot were observed. The animal was a healthy female and weighed 17.5lbs. The animal was given antibiotics as supportive care. Body measurements and DNA were collected and the animal was marked with yellow eartags in each ear. The lynx was observed during recovery and walked away putting weight on all four legs.

There was possibly a second cat at the capture site. Staff saw eye reflection and possible vocalization while on site.

See attached check list for reporting lynx captures and WS Incident Card for more information.

Report prepared & updated by: Jennifer Vashon 10/30/2012 and 11/1/2012  
Report reviewed by: Paul Farrington 11/1/2012, Mark Caron 11/1/2012

# Call For Service

CFS Number: **WS12-014397**  
Date: **10/21/2012 2:25:45 PM**

## Call For Service

---

CFS Number **WS12-014397**  
Date **10/21/2012 2:25:45 PM**  
Dispatcher  
Call Source **0 - Phone**  
Received **2:28:03 PM**  
Dispatched **2:29:03 PM**  
Arrived **12:00:00 AM**  
Cleared **8:30:00 PM**  
Location **Bull Bk Rd**  
City, State, Zip **Lambert Lake**  
Jurisdiction **W13 - Section 13**  
Grid **15721 - Lambert Lake Twp**  
Sector **W837**  
Map  
X Coordinate **0598928**  
Y Coordinate **5030271**  
  
Reviewed By

Complainant  
Address  
City, State, Zip  
Phone  
Call type  
Reported Offense **6892 - Trapping - Other**  
Verified Offense **6780 - Endangered/Threatened Species**  
  
Tow Company  
Vehicle  
Vehicle License  
Disposition **3 - Pending Approval**  
Priority  
Classification  
  
Agency **MWS - Maine Warden Service**  
Case  
Reviewed On

### Officers

10317 - Farrington, Paul

Notes C1 CALLED TO REPORT HE NEEDS TO SPEAK WITH A WARDEN REGARDING THE CANADIAN LYNX HE CAUGHT.  
Original Location : NEAR LAMBERT LAKE

Farrington-100 miles, 2.5 hrs reg, 3 hrs OT, responded and assessed situation, gathered information and secured area until wildlife biologists arrived and assisted them in wrk up on the Lynx. No violations.

**FORM FOR REPORTING & RESPONDING TO INCIDENTAL CAPTURES OF LYNX**

**1. Obtain information from CALLER**

Date 10/21/12 Time 2:20 IFW Staff collecting caller info: Paul Farrington  
 Trapper/Individual Reporting \_\_\_\_\_  
 Address \_\_\_\_\_ Phone number: \_\_\_\_\_

Circle all info that applies

Type of trap?  Foot-hold  Conibear  
 Animal still in trap?  Yes  No  
 Animal's Behavior  Calm  Sleeping  Pacing

When was trap last tended? 10/20/12  
 Is animal entangled?  Yes  No  
 Lynx injured?  Yes  No

Disturbance at the site? Yes  No   
 Vehicle traffic \_\_\_\_\_ Human disturbance \_\_\_\_\_  
 Equipment operation \_\_\_\_\_ Animal disturbance \_\_\_\_\_  
 \*advise caller to minimize disturbance to the animal \*

Current weather?  Clear  Rain  Snow  Windy  
 Overnight weather?  Clear  Rain  Snow  Windy  
 Current temperature? Low 50s  
 Overnight temperature? 40s

Directions and meeting time:

**2. Contact IFW lynx hotline 592-4734 to inform lynx specialist/ Mammal Group**

**3. At the site minimize disturbance (crowd and/or traffic control)**

**4. Information when ON-SITE:** Circle all information that applies

Size of trap #1.75  #2  #3  110  120  160  220 Other: \_\_\_\_\_  
 Inside jaw spread 4 7/8 inches  
 Jaw type Padded  Laminated  Offset   
 Securing method Staked  Drag   
 Bait?  Yes  No Visible? Yes  No?  4-cell foothold set  
 Lure?  Yes  No Type: \_\_\_\_\_  
 Town: Lambert Lake  
 Location: Bull Brook Rd.  
 GPS coordinates \_\_\_\_\_ E \_\_\_\_\_ N  
 GPS datum WGS84  NAD27  NAD83

Number of Swivels? 2 base + inline

All people present  
 1 \_\_\_\_\_  
 2 Paul Farrington  
 3 Willow Stair  
 4 Mack Caron  
 5 \_\_\_\_\_  
 6 \_\_\_\_\_  
 7 \_\_\_\_\_

**5. At the site: Assess the ANIMAL prior to chemical immobilization**

Animal entangled in vegetation?  Yes  No  
 Unresponsive? Yes  No   
 Broken bones? Yes  No  If yes, Compound non-compound  
 Bleeding? Yes  No  If yes, minor Major  
 Laceration? Yes  No  If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes  No

**6. Anesthesia (follow protocol and complete capture form)**

**7. Action Taken:**

Release uninjured?  Y  N Euthanized? Y/N Taken to rehab. Center? Y/N  
 Name & Location of Rehab Center \_\_\_\_\_ Phone # \_\_\_\_\_

Comments:

DATE: 10/21/12  
 Observers: Caron Starr, Farrington  
 Recorder: Starr  
 Road Name: Bull Brook Road

**Incidental Lynx Capture Form**  
 Town: Lambert Twp  
 County: Washington  
 Datum: WGS84 NAD27 NAD83

Lynx ID# LIC24  
 Time when manageable: 5:18  
 Time of recovery/ release: 7:26

| Mix Used:            | Ketaset Concentration: mg/ml | Xylazine Concentration: mg/ml | 5:1 Ket/Xyl Concentration: mg/ml | Time          | Delivery Method  | Additional Drug (If Needed)     | Amount        |
|----------------------|------------------------------|-------------------------------|----------------------------------|---------------|------------------|---------------------------------|---------------|
| 1 <sup>st</sup> Dose | <u>0.45</u> m l              | <u>0.05</u> m l               | m l                              | <u>5:38pm</u> | <u>Job stick</u> | Antibiotic (SCorIM) 0.5cc/10lbs | <u>0.5 cc</u> |
| 2 <sup>nd</sup> Dose | m l                          | m l                           | m l                              | <u>6:35pm</u> | <u>Hand</u> →    | Yohimbine(IVorIM)0.5cc/20lbs    | <u>0.5cc</u>  |
| 3 <sup>rd</sup> Dose | m l                          | m l                           | m l                              |               |                  | Midazolam(IVorIM) 0.5cc/slowly  |               |
| 4 <sup>th</sup> Dose | m l                          | m l                           | m l                              |               |                  | Epinephrine(SCorIM) 0.5cc/10lb  |               |
| Comments:            |                              |                               |                                  |               |                  | Doxapram (IVorSL) 1.0cc/22lbs   |               |

EarTag#(Left) 238 (Right) 238 Tag Color: Yellow Green Red Other: \_\_\_\_\_  
**Radio Collared:** Y (N) Initial/Previously Collared Collar Works: Y N **Make:** LT Sirtrack ATS GPS SAT VHF  
 Radio Collar Frequency: \_\_\_\_\_ Replacement Collar Freq.: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months  
 Leather Circumference: \_\_\_\_\_ mm

**PHYSICAL INFORMATION**  
 Sex: M (F) Year Born(if known) \_\_\_\_\_  
 Estimated Age: Kitten Subadult (Adult)  
**Teeth:** Normal Missing Broken Worn Describe: chipped upper canine  
 Photo of Teeth? side view (2) \_\_\_\_\_ front view \_\_\_\_\_  
**Coat Condition:** Prime Summer Shedding Mange Bare/Worn  
 Capture Foot? Front: L, R or Hind: L, R Capture Foot Injuries? Y (N)  
 Describe: \_\_\_\_\_

**Subjective Body Condition:**  
 Poor Fair Good (Excellent)  
**Objective Normal Abnormal**  
 Eyes/Ears ✓  
 Nose/Mouth ✓  
 Neck/Torso ✓  
 Skin ✓  
 Extremities ✓  
**Assessment:** chipped top left canine - old injury prior to this capture.  
**Plan:** Release/no sedation, Euthanize (Sedation: Treat in field, or Transport to Vet;

Mark abnormal area below:

**Normal - 101-102.5**

| Body Temp      | Time        |
|----------------|-------------|
| <u>101.7 F</u> | <u>5:55</u> |
| <u>101.4 F</u> | <u>6:05</u> |
| <u>101.2 F</u> | <u>6:12</u> |
| <u>100.6 F</u> | <u>6:25</u> |
| F              |             |

**BODY MEASUREMENTS**

|                             |                 |                             |                                                      |
|-----------------------------|-----------------|-----------------------------|------------------------------------------------------|
| Weight (Actual or Estimate) | <u>17.5</u> lbs | <b>Tail Banding Pattern</b> | <u>(No Bands)</u> 1 Band 2 Bands 3 Bands             |
| Neck Circumference          | <u>210</u> mm   | <b>Color of tip of tail</b> | <u>(Completely Black)</u> Black on top/white beneath |
| Chest Girth                 | <u>340</u> mm   | <b>Hind Foot Coloration</b> | Dark Brown <u>(Grey)</u> Other: _____                |
| Shoulder Height             | <u>509</u> mm   | <b>Toe Coloration</b>       | <b>Inside Middle Middle Outside</b>                  |
| Tail Length (tip of bone)   | <u>100</u> mm   | Left Front                  | <u>(Grey)</u> " " " "                                |
| Tail Length (tip of tail)   | <u>120</u> mm   | Right Front                 | " " " "                                              |
| Total Length                | <u>970</u> mm   | Left Rear                   | " " " "                                              |
| Zygomatic Arch              | mm              | Right Rear                  | " " " "                                              |
| Ear Tuft Length             | <u>40</u> mm    |                             |                                                      |

Scars: Y N Description \_\_\_\_\_  
**DNA:** Hair Sample Y (N) Tissue Sample Y (N) Blood Sample Y (N)  
**Parasites:** Y (N) Sample: Y N Rare Light Common  
 Photos? (YES) NO Photo Number \_\_\_\_\_  
 Reviewed Data Sheet? YES NO

Comments: possibly a second 'cat' in woods at site saw eye reflections and possibly cat vocalization





**Lynx Incidental Capture Report**

**Report No. 2012-TRP006**

**Lynx ID: LIC26**

**Name of Individual Reporting Capture:** [REDACTED]

**Name of Biologist/Warden Responding to Report:** Wdn. Paul Farrington, Biologists Jennifer Vashon, Tom Schaffer, and Jim Hall. Dr. Stuart Sherburne DVM

**Type of Capture:** Trap

*Set type:* Dirthole

*Trap type and size:* #3

*Jaw spread and swivels:* 5 1/4" and 2 swivels

*Staking:* Drag with long chain

*Bait:* Yes

*Lure:* Yes

*Visibility of Bait:* No

*Legal Set?* Yes

**Location of Capture:** Codyville Pt.

**Wildlife Management District:** 19

**GPS Coordinates (UTM preferred):** 5034571, 608262

**GPS Map Datum (NAD 83 preferred):** Nad83

**Date of Capture:** 10/26/12

**Disposition of Lynx:** Alive, sedated, and released on site

**Age/Sex:** male 26 lbs

**Description of events**

**Response:** At 1130 on 10/26/2012, Wdn. Farrington received a call from Wdn. Brad Richard that a trapper had called to report a lynx in his trap in Codyville Plantation. Wdn. Farrington called the lynx hotline to initiate a response. Wdn. Farrington and biologists Jennifer Vashon, Tom Schaffer, and Jim Hall, and Dr. Stuart Sherburne DVM responded. USFWS Special Agent Eric Holmes was notified of the capture. Wdn. Farrington checked the set and interviewed the trapper and determined that the trap was legal. The lynx was sedated, examined for injuries, provided supportive care and released from the trap onsite.

**Weather conditions:** Daytime temperature was 50 degrees F with clear skies and rising; temperatures ~65 degrees F at time of handling. Overnight temperature was high 30s to low 40s.

**Disturbance:** No vehicle traffic in the area when staff was on-site and unlikely there had been any traffic (old road accessible with 4WD).

**Assessment of the lynx:** The drag was entangled in vegetation at the edge of the road, allowing the animal to reach cover behind two small birch trees on the backside of a berm. The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, torso, were found

to be normal and extremities were found to be abnormal (a small laceration ~1/8" on dorsal aspect of right front capture foot and mild swelling). Laceration was through the first layer of skin. The animal was treated with antibiotics and subcutaneous fluids supportively; wound care consisted of thorough irrigation. Body temperature was normal. The animal was a healthy male and weighed 26lbs. Dr. Sherburne concurred with our injury assessment and treatment, and noted that the laceration was minor. Body measurements and DNA were collected and the animal was marked with yellow eartags in each ear. The lynx was given an injection of yohimbine to reverse the effects of the sedative (xylazine) and observed during recovery. The animal initially favored the capture foot, but applied its full weight on all 4 legs as the sedative wore off.

See attached check list for reporting lynx captures and WS Incident Card for more information.

Report prepared & updated by: Jennifer Vashon 11/2/12 and 11/8/12

Report reviewed by: Wdn Paul Farrington 11/7/12 and Dr. Stuart Sherburne DVM 11/8/12.

# Call For Service

CFS Number: **WS12-014653**  
Date: **10/26/2012 12:29:53 PM**

## Call For Service

---

|                  |                               |                  |                                             |
|------------------|-------------------------------|------------------|---------------------------------------------|
| CFS Number       | <b>WS12-014653</b>            | Complainant      | <b>FARRINGTON, WDN</b>                      |
| Date             | <b>10/26/2012 12:29:53 PM</b> | Address          | <b>Codyville</b>                            |
| Dispatcher       |                               | City, State, Zip |                                             |
| Call Source      | <b>3 - Field</b>              | Phone            |                                             |
| Received         | <b>12:30:10 PM</b>            | Call type        |                                             |
| Dispatched       | <b>12:30:14 PM</b>            | Reported Offense | <b>6892 - Trapping - Other</b>              |
| Arrived          | <b>12:00:00 AM</b>            | Verified Offense | <b>6780 - Endangered/Threatened Species</b> |
| Cleared          | <b>12:30:20 PM</b>            | Tow Company      |                                             |
| Location         | <b>Codyville</b>              | Vehicle          |                                             |
| City, State, Zip | <b>CODYVILLE PLT</b>          | Vehicle License  |                                             |
| Jurisdiction     | <b>W13 - Section 13</b>       | Disposition      | <b>3 - Pending Approval</b>                 |
| Grid             | <b>15608 - Codyville Plt</b>  | Priority         |                                             |
| Sector           | <b>W134</b>                   | Classification   |                                             |
| Map              |                               | Agency           | <b>MWS - Maine Warden Service</b>           |
| X Coordinate     | <b>0602129</b>                | Case             |                                             |
| Y Coordinate     | <b>5032636</b>                | Reviewed On      |                                             |
| Reviewed By      |                               |                  |                                             |

### Officers

10317 - Farrington, Paul

Notes **\*\*LYNX IN TRAP**  
Original Location : CODYVILLE

Farrington- called by Wdn Richard informing that [REDACTED] had a Lynx in a trap. I made contact with [REDACTED] and made plans to meet him. We went in to the scene and I assessed the scene and notified Jen Vashon. I secured the scene and assisted with work-up on the lynx after it was immobilized chemically. 4.5 hrs, 70 miles

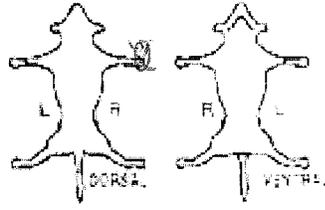
DATE: 10/26/12 **Incidental Lynx Capture Form** Lynx ID# LIC26  
 Observers: Vashon, Sherburne, Hall  
 Recorder: Schaeffer Town: Codyville Time when manageable: 1535  
 Road Name: \_\_\_\_\_ County: Washington Time of recovery/release: 1715  
 UTMe 5034571 UTMn 19T0608262 Datum: WGS84 NAD27 NAD83

| Mix Used:            | Ketaset Concentration: <u>100</u> mg/ml | Xylazine Concentration: <u>100</u> mg/ml | 5:1 Ket/Xyl Concentration: mg/ml | Time        | Delivery Method   | Additional Drug (If Needed)     | Amount          |
|----------------------|-----------------------------------------|------------------------------------------|----------------------------------|-------------|-------------------|---------------------------------|-----------------|
| 1 <sup>st</sup> Dose | <u>1.25</u> ml                          | <u>0.25</u> ml                           | ml                               | <u>3:27</u> | <u>jab stick</u>  | Antibiotic (SCorIM) 0.5cc/10lbs | <u>1.5 59</u>   |
| 2 <sup>nd</sup> Dose | ml                                      | ml                                       | ml                               | <u>4:30</u> | <u>20cc Needl</u> | Yohimbine (IVorIM) 0.5cc/20lbs  | <u>0.7cc IV</u> |
| 3 <sup>rd</sup> Dose | ml                                      | ml                                       | ml                               |             |                   | Midazolam (IVorIM) 0.5cc/slowly |                 |
| 4 <sup>th</sup> Dose | ml                                      | ml                                       | ml                               |             |                   | Epinephrine (SCorIM) 0.5cc/10lb |                 |
| Comments: _____      |                                         |                                          |                                  |             |                   | Doxapram (IVorSL) 1.0cc/22lbs   |                 |

EarTag#(Left) 166 (Right) 166 Tag Color: Yellow Green Red Other: \_\_\_\_\_  
**Radio Collared:** Y N **Initial/Previously Collared** Collar Works: Y N **Make:** LT Sirtrack ATS GPS SAT VHF  
 Radio Collar Frequency: \_\_\_\_\_ Replacement Collar Freq.: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months  
 Leather Circumference: \_\_\_\_\_ mm

**PHYSICAL INFORMATION**  
 Sex: M F Year Born (if known) \_\_\_\_\_  
 Estimated Age: Kitten Subadult Adult  
**Teeth:** Normal  Missing  Broken  Worn   
 Describe: \_\_\_\_\_  
 Photo of Teeth? side view (2) \_\_\_\_\_ front view \_\_\_\_\_  
**Coat Condition:** Prime  Summer   
 Shedding  Mange  Bare/Worn  
 Capture Foot? Front: L, R or Hind: L, R  
 Capture Foot Injuries? Y N  
 Describe: MINOR LACERATION

**Subjective Body Condition:**  
 Poor  Fair  Good  Excellent   
**Objective** Normal Abnormal  
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities    
**Assessment:** \_\_\_\_\_  
EX CAP FOOT RIF SWELLING  
MINOR LACERATION  
**Plan:** Release/no sedation, Euthanize  
 Sedation: Treat in field or Transport to Vet;  
200cc FLUIDS, 20 Antibiotics

Mark abnormal area below:  
  
**Normal - 101-102.5**

| Body Temp      | Time        |
|----------------|-------------|
| <u>102.5 F</u> | <u>3:45</u> |
| <u>101.4 F</u> | <u>3:55</u> |
| <u>101.8 F</u> | <u>4:10</u> |
| <u>101.2 F</u> | <u>4:25</u> |
| F              |             |

**BODY MEASUREMENTS**

|                                           |                                                                      |
|-------------------------------------------|----------------------------------------------------------------------|
| Weight (Actual or Estimate) <u>26</u> lbs | <b>Tail Banding Pattern</b> No Bands   1 Band   2 Bands   3 Bands    |
| Neck Circumference <u>250</u> mm          | <b>Color of tip of tail</b> Completely Black                         |
| Chest Girth <u>40</u> mm                  | <b>Hind Foot Coloration</b> Dark Brown   <u>Grey</u>   Other: _____  |
| Shoulder Height <u>500</u> mm             | <b>Toe Coloration</b>                                                |
| Tail Length (tip of bone) <u>120</u> mm   |                                                                      |
| Tail Length (tip of tail) <u>150</u> mm   | Left Front <u>Brown</u>   <u>Brown</u>   <u>Brown</u>   <u>Brown</u> |
| Total Length <u>1020</u> mm               | Right Front "   "   "   "                                            |
| Zygomatic Arch _____ mm                   | Left Rear "   "   "   "                                              |
| Ear Tuft Length <u>50</u> mm              | Right Rear "   <u>WHITE</u>   <u>WHITE</u>   "                       |

Scars: Y N Description just the tips of toes  
**DNA:** Hair Sample Y N **Parasites:** Y N  
 Tissue Sample Y N **Sample:** Y N  
 Blood Sample Y N Rare Light Common  
 Photos? YES NO Photo Number Jen & Paul  
 Reviewed Data Sheet? YES NO

Comments: Dr. Sherburne agreed with our assessment & treatment indicated injury was minor.

# FORM FOR REPORTING & RESPONDING TO INCIDENTAL CAPTURES OF LYNX

## 1. Obtain information from CALLER

Date 10/24/12 Time 1130 IFW Staff collecting caller info: Farrington  
 Trapper/Individual Reporting [Redacted]  
 Address [Redacted] Phone number: [Redacted]

Circle all info that applies

Type of trap?  Foot-hold  Conibear  
 Animal still in trap?  Yes  No  
 Animal's Behavior  Calm  Sleeping  Pacing  
 When was trap last tended? 10/25/12  
 Is animal entangled?  Yes  No  
 Lynx injured?  Yes  No

Disturbance at the site? Yes  No  Other: \_\_\_\_\_  
 Vehicle traffic Human disturbance Equipment operation Animal disturbance  
 \*advise caller to minimize disturbance to the animal \*

Current weather?  Clear  Rain  Snow  Windy  
 Overnight weather?  Clear  Rain  Snow  Windy  
 Current temperature? 65  
 Overnight temperature? \_\_\_\_\_

Directions and meeting time: Computer Rd 1300

## 2. Contact IFW lynx hotline 592-4734 to inform lynx specialist/ Mammal Group

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. Information when ON-SITE:

Circle all information that applies

Size of trap #1.75 #2  #3 110 120 160 220 Other: \_\_\_\_\_  
 Inside jaw spread 5 1/4 inches Number of Swivels? 2  
 Jaw type Padded Laminated Offset  
 Securing method Staked  Drag  
 Bait?  Yes  No Visible? Yes  No  
 Lure?  Yes  No Type: \_\_\_\_\_  
 Town: Cadyville  
 Location: Computer Rd  
 GPS coordinates \_\_\_\_\_ E \_\_\_\_\_ N  
 GPS datum WGS84 NAD27  NAD83

All people present  
 1 Farrington  
 2 Schaefer  
 3 Hall  
 4 Dashon  
 5 Sherburne  
 6 [Redacted]  
 7 \_\_\_\_\_

## 5. At the site: Assess the ANIMAL prior to chemical immobilization

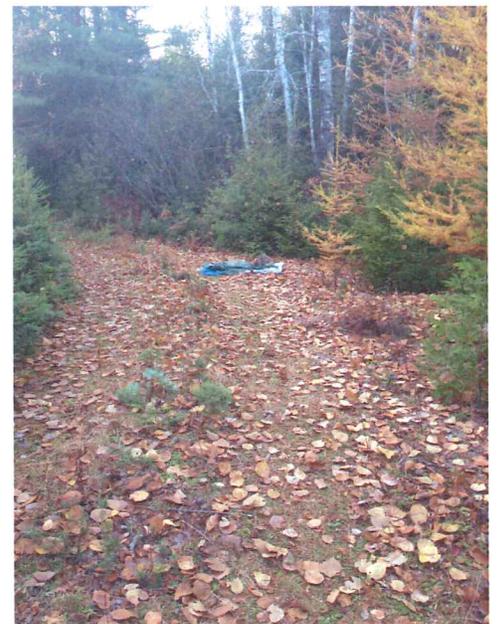
Animal entangled in vegetation?  Yes  No  
 Unresponsive? Yes  No  
 Broken bones? Yes  No If yes, Compound non-compound  
 Bleeding? Yes  No If yes, minor Major  
 Laceration? Yes  No If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes  No

## 6. Anesthesia (follow protocol and complete capture form)

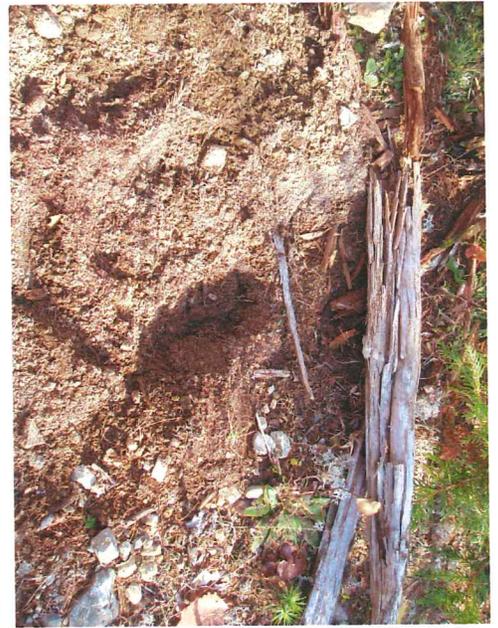
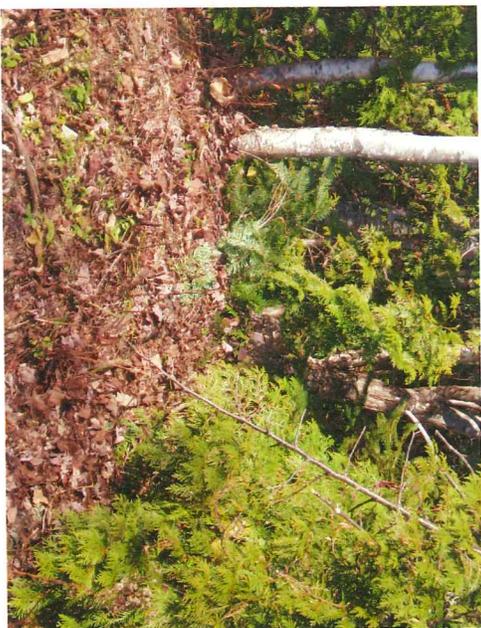
## 7. Action Taken:

Release uninjured?  Y  N Euthanized?  Y  N Taken to rehab. Center?  Y  N  
 Name & Location of Rehab Center \_\_\_\_\_ Phone # \_\_\_\_\_

Comments:











# United States Department of the Interior

FISH AND WILDLIFE SERVICE

In Reply Refer To:  
FWS/AES/OCHR-001897

FEB 28 2001

## Memorandum

To: Chief, Division of Management Authority

From: Assistant Director - Endangered Species

Subject: Transmittal of the Amended Formal Biological Opinion on the Effects of the CITES Export Program for Appendix II Furbearer Species on the Contiguous United States Distinct Population Segment of the Canada Lynx

This document transmits the Washington Office Endangered Species: Division of Consultation, Habitat Conservation Planning, Recovery, and State Grants of the U.S. Fish and Wildlife Service's amended biological opinion on the effects of the CITES Export Program for Appendix II Furbearer Species (CITES Export Program) on the contiguous United States Distinct Population Segment of the Canada lynx (*Lynx canadensis*) pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act). This biological opinion is effective until the end of the 2001 bobcat trapping season.

This amended biological opinion is based on information provided in the:

- (1) February 6 and 7, 2001, email messages from Lori Nordstrom describing the take of lynx in Montana.
- (2) February 7, and 8, 2001, meetings between Endangered Species Branch of Consultation staff and staff from International Affairs, Division of Management Authority, during reinitiation of consultation process.
- (3) February 8, 2001, request from DMA to reinitiate section 7 consultation.
- (4) February 12, 2002, Draft, Amended Biological Assessment.
- (5) unpublished materials in Service files.

A complete administrative record of this consultation is on file at the Service's Endangered Species: Division of Consultation, Habitat Conservation Planning, Recovery, and State Grants.

Attachment

## BIOLOGICAL OPINION

### Introduction

Due to new information sent to the Service on February 7, 2001, DMA reinitiated consultation and provided additional information provided to our office. The following summarizes the new information.

### Description of the Proposed Action

Note: the U.S. Fish and Wildlife Service's Office of Management Authority has become the U.S. Fish and Wildlife Service's Division of Management Authority. The June 30, 2000, biological opinion was transmitted to OMA while this amended biological opinion is transmitted to DMA.

See the June 30, 2000, biological opinion for a complete description of the proposed action.

Here is a summary of the bobcat trapping season closing dates for the 14 states and 3 tribes with lynx habitat and bobcat trapping under the DMA Program:

| <u>State/Tribe</u>            | <u>Closure Date</u>                                                                                                                                                                                                 |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| * Colorado                    | February 28, 2001                                                                                                                                                                                                   |
| * Idaho                       | February 28, 2001                                                                                                                                                                                                   |
| Maine                         | January 31, 2001                                                                                                                                                                                                    |
| * Michigan                    | March 1, 2001                                                                                                                                                                                                       |
| Minnesota                     | January 7, 2001                                                                                                                                                                                                     |
| New Hampshire                 | CLOSED to Bobcat                                                                                                                                                                                                    |
| * New York                    | February 15, 2001                                                                                                                                                                                                   |
| * Montana                     | February 15, 2001 -<br>District 1-3 (District 2 is where the take was,<br>District 1 and 3 have lynx but are<br>closed)<br>March 1, 2001 -<br>District 4-7 (District 4 has some lynx habitat,<br>District 5 closed) |
| * Oregon                      | February 28, 2001                                                                                                                                                                                                   |
| * Utah                        | February 18, 2001                                                                                                                                                                                                   |
| Vermont                       | February 7, 2001                                                                                                                                                                                                    |
| Washington                    | January 31, 2001                                                                                                                                                                                                    |
| Wisconsin                     | December 31, 2000                                                                                                                                                                                                   |
| * Wyoming                     | March 1, 2001                                                                                                                                                                                                       |
| * Wind River Reservation (WY) | February 15, 2001 or earlier                                                                                                                                                                                        |
| Klamath Tribe (WA)            | No info                                                                                                                                                                                                             |
| Penobscot Tribe (ME)          | December 31, 2000                                                                                                                                                                                                   |

The following is a compilation of relevant and current Montana regulations on trapping of bobcat (Anon., 2000b) that are important in understanding the new information that triggered reinitiation of the June 30, 2000, consultation:

- (1) Bobcat “may be taken only by resident trappers or hunters that purchase a trapper license prior to December 1.”
- (2) “The Fish, Wildlife & Parks Commission has authorized the department to initiate closure prior to reaching the quota or subquota when conditions or circumstances indicate the quota may be reached within the 48-hour closure notice period.”
- (3) “Trappers or hunters must personally report their harvest within 24 hours by calling the Fish, Wildlife & Parks regional office during offices hours in the trapping district where the animal was taken.”
- (4) “Trappers are required to provide harvest registration data at the time the pelt is presented to FWP personnel for tagging.”
- (5) “Pelts must be tagged by Fish, Wildlife and Parks personnel residing in the trapping district where the animal was taken within 5 days of taking.”
- (6) “Pelts not registered or presented to department personnel within 5 days are subject to confiscation.”

### **Status of the Species**

See the June 30, 2000, biological opinion for a complete description of the status of the species.

### **Environmental Baseline**

See the June 30, 2000, biological opinion for a complete description of the environmental baseline.

In addition, the following is an edited summary of the incidental take of a lynx in a bobcat set trap as excerpted from a February 8, 2001, email summary record of a conversation of a Service biologist with the state furbearer coordinator:

“A [young] female, radio-collared lynx was taken in a bobcat set in early February 2001 in Trapping District 2 (west central Montana). She was found dead near the trap with a swollen foot. It is not clear whether she pulled herself clear or if the trapper released her. It is also unknown what the cause of death was. Researchers have the body for necropsy. Bobcat trapping quotas [in Montana] are set for each of the seven trapping districts. If the quota is met prior to the scheduled end of the trapping season, the district is closed to

further trapping. Trapping districts 1, 2, and 3 are initially scheduled to be open from December 1 - February 15. The other four districts are open from December 1 - March 1. The quotas have been met in districts 1, 3, and 5, and they have been closed. Trapping districts 6 and 7 are in eastern Montana and have bobcat habitat, but no lynx habitat. The only lynx habitat in district 4 is a small area on the western side. District 2 is in the middle of lynx habitat. [Montana] said that the quota of 180 had almost been met (... they are about 20 short of the quota). The district may be closed down this weekend [February 10 and 11]. At the latest, the season will close on February 15. In a general discussion on trapping in Montana, [Montana] said that they had a strong trapper community. There is a lot of interest, both in trapping and in using hounds. Prices for Montana bobcats is about \$80 to \$120. Other fur prices also remain high enough to make the effort worth it.”

Prior to the incidental take of this lynx in a bobcat trap, the Service had no records of the incidental take of lynx from approved States and Tribes in the CITES Export Program for Appendix II Furbearer Species.

Related take of lynx that has occurred through trapping or hunting includes the following:

Montana –

One killed in conibear set for a wolverine (it was a legal set for a wolverine); one female caught by the toe in a tiny leghold (size 0 or 00) set for a marten; Fall 2000, a lynx was poached by a lion hunter; a trapper caught a lynx this year and let it go; a collared kitten was poached early in the lion season;

Maine --

Lynx broke its leg in a leghold set for a coyote; MDIFW people received video footage of a lynx released from a leghold set for a coyote.

The project baseline includes all biological opinions that have been issued by the Service in States receiving furbearer tags that have addressed affects on lynx and its habitat.

**Effects of the Action**

The June 30, 2000, biological opinion described the effects of OMA’s ongoing Action, the CITES Export Program for Appendix II Furbearer Species, as “insignificant, discountable, or extremely unlikely to affect” the listed lynx population. OMA concluded that the CITES Export Program “may affect, but is not likely to adversely affect,” the listed lynx population. A biological opinion was transmitted to OMA on June 30, 2000, that exempted one lynx and used the take of one lynx to trigger reinitiation of consultation. As a result of the take of one lynx in a bobcat set in early February 2001, consultation was reinitiated and the resultant adverse effect analyzed.

### **Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Trapping for non-CITES regulated species such as coyote, wolverine, and martin are expected to result in mortality and harassment of lynx. These effects were not considered in the June 30 biological opinion and are not considered in this amended biological opinion due to the short time remaining in the bobcat trapping season, approximately one week, and the section 4(d) exemption process underway.

Forest thinning and fire suppression are likely to result in the loss of lynx habitat. Habitat connectivity is reduced by increasing urbanization and high volume traffic highways. Together, these may significantly affect the survival of the lynx.

### **Conclusion**

After reviewing the current status of the affected species, the amended environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the amended Cites Export Program for Appendix II Furbearer Species as implemented, until its closing on or about March 1, 2001, is not likely to jeopardize the continued existence of the contiguous United States distinct population segment of the Canada lynx. Critical habitat for the lynx has not been designated.

## **INCIDENTAL TAKE STATEMENT**

Section 9 of the Act, and Federal regulation pursuant to section 4(d) of the Act, prohibits the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this **Incidental Take Statement**.

The measures described below are nondiscretionary and must be undertaken by DMA so that

they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. DMA has a continuing duty to regulate the activity covered by this incidental take statement. If DMA (1) fails to adhere to the terms and conditions of the incidental take statement, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

### **Amount or Extent of Incidental Take**

Based on the available information, the Service anticipates the following level of take as a result of this proposed project: Incidental take for lynx is expected in the form of: one (1) additional lynx may be killed or injured due to trapping.

### **Effect of the Take**

In the accompanying biological opinion, the Division determined that this level of anticipated take is not likely to jeopardize the continued existence of the lynx DPS.

### **Reasonable and Prudent Measures**

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the effects of incidental take that might otherwise result from the proposed action. This biological opinion will expire at the end of the 2001 bobcat trapping season, on or about March 1, 2001.

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the impact of take on the lynx:

- (1) DMA shall report lynx by-catch resulting from bobcat trapping within two working days of occurrence.
- (2) Consultation shall be reinitiated within two days if take occurs.
- (3) DMA shall coordinate on methods to minimize and avoid lynx take due to bobcat trapping with the Services' Regions and the various States where bobcat tags are issued.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, DMA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. The following terms and conditions implement reasonable and prudent measure number one:

- (A) DMA shall report any lynx by-catch as described in the June 30, 2000, **Project Description** within two working days to the Chief, Division of Consultation, Habitat Conservation Planning, Recovery, and State Grants at (703) 358-2171 and to the Montana Field Office, Field Supervisor at (406) 449-5225.
  - (B) DMA shall submit a report by March 30, 2001, to Division of Consultation, Habitat Conservation Planning, Recovery, and State Grants and the Montana Field Office at the following addresses, describing lynx by-catch for the original 1-year consultation interval: U.S. Fish and Wildlife Service, Chief, Division of Consultation, Habitat Conservation Planning, Recovery and State Grants, 4401 N. Fairfax Drive, Room 420, Arlington, VA 22203; and, U.S. Fish and Wildlife Service, Montana Field Office, 100 North Park, Suite 320, Helena MT, 59604.
2. The following term and condition implements reasonable and prudent measure number two: DMA shall reinstate consultation within two (2) working days if trapping by-catch resulting in the take of lynx occurs.
3. The following term and condition implements reasonable and prudent measure number three:
- (A) DMA shall coordinate with the Services' Regions and all States where bobcat tags are issued to devise measures, including education of trappers, that will be used to minimize and avoid take in the long-term Biological Opinion on the Effects of the CITES Export Program for Appendix II Furbearer Species on the Contiguous United States Distinct Population Segment of the Canada Lynx that is due on, or before, June 30, 2001. On or before March 30, 2001, these measures shall be submitted to the U.S. Fish and Wildlife Service, Chief, Division of Consultation, Habitat Conservation Planning, Recovery, and State Grants, 4401 N. Fairfax Drive, Room 420, Arlington, VA 22203; and, U.S. Fish and Wildlife Service, Montana Field Office, 100 North Park, Suite 320, Helena MT, 59604.
  - (B) DMA shall coordinate with the Services' Regions and all States where bobcat tags are issued to devise a more effective monitoring program to determine take of lynx. On or before March 30, 2001, this monitoring program shall be submitted to the U.S. Fish and Wildlife Service, Chief, Division of Consultation, Habitat Conservation Planning, Recovery, and State Grants, 4401 N. Fairfax Drive, Room 420, Arlington, VA 22203; and, U.S. Fish and Wildlife Service, Montana Field Office, 100 North Park, Suite 320, Helena MT, 59604.

## **Reporting Requirements**

DMA must notify the Division of Consultation, Habitat Conservation Planning, and Recovery and the Montana Field Office are to be notified within two working days of the finding of any trapped lynx or any unanticipated harm to the lynx. The Division contact person for this is the Chief, Division of Consultation, Habitat Conservation Planning and Recovery at (703) 358-2171 and the Montana Field Office contact person is the Field Supervisor at (406) 449-5225. Any dead or severely injured lynx shall be transferred to the nearest state, tribal, or federal wildlife agency. Carcasses become the property of the state or tribe for education purposes.

### **CONSERVATION RECOMMENDATIONS**

See the June 30, 2000, biological opinion for a complete description of the conservation recommendations.

In order for the Division to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

### **REINITIATION - CLOSING STATEMENT**

This concludes formal consultation on the actions outlined in the request for reinitiated consultation. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or, (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, in this instance, one lynx is authorized to be taken, any operations causing such take must cease pending reinitiation.

If you have any questions, please contact Renne Lohofener, Endangered Species: Chief, Division of Consultation, Conservation Planning, and Recovery, at (703) 358-2171. We appreciate the cooperation of DMA throughout this consultation process.

### **Literature Cited**

See the June 30, 2000, biological opinion for a complete description of the literature cited.



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Washington, D.C. 20240

ONLY THE DIRECTOR  
WILDLIFE SERVICE

In Reply Refer To:  
FWS/OCHR/004392

SEP 24 2001

## Memorandum

To: Assistant Director for International Affairs  
Attention: Chief, Division of Management Authority

From: Assistant Director for Endangered Species **GARY FRAZER**

Subject: Transmittal of the Formal Ten-Year Biological Opinion on the Effects of the CITES Export Program for Appendix-II Furbearer Species on the Contiguous United States Distinct Population Segment of the Canada Lynx

This document transmits the Division of Consultation, HCPs, Recovery, and State Grants of the U.S. Fish and Wildlife Service's biological opinion on the effects of the CITES Export Program for Appendix-II Furbearer Species (CITES Export Program) on the contiguous United States distinct population segment of the Canada lynx (*Lynx canadensis*) pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act).

This biological opinion is based on information provided in the:

1. February 28, 2001, Amended Biological Opinion on the CITES Export Program.
2. March 29, 2001, letter from the Assistant Director - International Affairs to the Assistant Director - Endangered Species on the February 28 Amended Biological Opinion.
3. April 27, 2001, telephone conversation between Bob Pine of Division of Consultation, HCPs, Recovery, and State Grants and lynx biologists Lori Nordstrom and Anne Vandehey of the Region 6 Montana Fish and Wildlife Office.
4. April 30, 2001, Meeting between Bob Pine and Elena Babij of Division of Consultation, HCPs and Recovery and Andrea Gaski of Division of Management Authority.
5. June 14, 2001, Biological Assessment by the Division of Management Authority.

420 ALLSO-211574 Bob Pine

A complete administrative record of this consultation is on file at the Service's Division of Consultation, HCPs, Recovery and State Grants.

If you have any questions, please contact Renne Lohofener, Chief, Division of Consultation, HCPs, Recovery, and State Grants at (703) 358-2171. We appreciate the cooperation of the Division of Management Authority throughout this consultation process.

cc: 3012-MIB-FWS/Directorate Reading File  
3242-MIB-FWS/AES RF (2)  
331-ARLSQ-FWS/DAES  
420-ARLSQ-FWS/OCHR RF  
420-ARLSQ-FWS/OCHR (RPine)  
420-ARLSQ-FWS/OCHR BCH Ctrl#00

FWS/TE:RPine:cmj:06/27/01:703-358-2106:T:ABCH\gtmlynxbo6.18\_v2.wpd

## BIOLOGICAL OPINION

### Description of the Proposed Action

The CITES Export Program for Appendix-II Furbearer Species was developed because the species covered by the Program are listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The species are: Alaskan gray wolf *Canis lupus*, Alaskan brown bear *Ursus arctos*, bobcat *Lynx rufus*, lynx *Lynx cagnadensis* (currently only captive-bred specimens are exported under this Program), and river otter *Lutra canadensis*. Before any species listed in CITES Appendix II can be exported from the United States, the Division of Management Authority must determine that the specimens to be exported were legally acquired, and the Division of Scientific Authority must advise that their export will not be detrimental to the survival of the species or to other similarly-listed species.

The CITES Export Program provides for these findings to be made in accordance with CITES provisions and establishes an ongoing system for the issuance of permits and export of the five CITES Appendix-II native furbearer species. Approximately 20 years ago, these furbearer species were listed in CITES Appendix II as "look-a-like" species, based upon the provisions of Article II, paragraph 2(b) of the CITES treaty. Such species are regulated because specimens of these species are similar in appearance to other species that are listed in Appendix I or II based on their own status so that trade in these other listed species can be effectively controlled.

The Service develops the two CITES findings when a State or Tribal program is approved, beginning in the year of approval and for subsequent years. The State or Tribal programs are reviewed periodically to verify that they still qualify for inclusion in the export program, and that the species involved still qualifies for listing in CITES for "look-a-like" reasons and not because they require the application of trade controls of their own merits.

Once these findings are made, tags are annually distributed in July by the export tag manufacturer directly to the States and Tribes. Skins are tagged in accordance with the protocol set up by the State or Tribe, and approved by the Division of Management Authority. Thereafter, skins may be exported from the United States through a designated wildlife port. Individuals and companies wishing to export skins must complete an export permit application, and pay the appropriate application and inspection fees. A valid CITES export permit, listing the pelt tag numbers, must accompany all exported skins.

The following sections specifically identify the type of information requested from each State or Tribe in order for the Service to make its two CITES findings for the CITES Export Program.

---

<sup>1</sup> Except for taxa already listed in Appendix I, the entire cat family, Felidae, otter sub-family, Lutrinae, and gray wolves, *Canis lupus*, were listed in CITES Appendix II in 1977, and the North American population of brown bear, *Ursus arctos*, except for *U. a. nelsoni*, were listed in Appendix II in 1975.

Usually, a report is submitted by each approved State or Tribe annually providing the information identified below.

Generally, the following conditions must be met for the program to be approved:

1. Current State or Tribal hunting, trapping, and tagging regulations and sample tags must be on file with the Division of Management Authority;
2. The tags must be durable and permanently locking, and must show the US-CITES logo, the abbreviation for the State or Tribe of origin, the year of take, the species abbreviation, and a unique serial number at the direction of the Division of Management Authority, with tags currently provided by the manufacturer to the approved programs;
3. To minimize movement of untagged pelts as authorized and prescribed by State or Tribal regulation, trappers or other persons taking furbearers must permanently attach tags to all pelts within a minimum time after trapping, pelts not intended for export must still be tagged;
4. Takers/trappers/dealers who are licensed or registered by the State or Tribe must account for all tags received and must return unused tags to the State or Tribe within a specified time after the season closes; and,
5. Export of fully manufactured fur or hide products from the United States is allowed only when the CITES export tags removed from the hides prior to manufacture are surrendered prior to export.

As noted above, the Service must also ensure that export levels of species listed in CITES Appendix II will not be detrimental to the survival of the species. For CITES furbearers, such findings were made for State and Tribal export programs in a series of rules published from 1984 to 1999. The Service periodically reviews the status of the species involved in the furbearer programs. During such a review, the following information is considered:

1. Whether the species is subject to legal harvest in each State or on Tribal lands; and
2. A professional assessment, provided by the State or Tribe, of the status of the species on relevant State or Tribal lands.

In making its determination, the Service considers whether the information provided includes:

- (1) Data on population estimates and trends independent of harvest information, such as scent station surveys, archer surveys, and road kill counts;
- (2) An analysis of carcass demographics and population models;

- (3) An analysis of past harvest levels as a function of fur prices, trapper effort, or other indices not derived from the harvest data itself; and,
- (4) Reports prepared on population status and harvest as part of the State or Tribal management program.

When does the Action take place? Under the terms of the annual Federal tag contract, the export program tags for furbearers are mailed by the tag manufacturer directly to each State or Tribe, no later than July 1 of each year. However, in 2001, the tags will be mailed in early August. Tags are then distributed within each State or Tribe in a manner and within a time frame decided upon by the State or Tribe and previously approved by the Service. Exporters may apply at any time for an export permit to export tagged skins from the United States. This consultation covers the ongoing implementation of the program through June 30, 2011.

Who is doing the action and under what authority? The Division of Management Authority, under the authority of the Section 8A of the Endangered Species Act that implements CITES, administers this program. On September 29, 1980, the Service first published criteria to make decisions on the export of bobcat, lynx, and river otter.

Forty-four States and five Native American Tribes have one or more programs for the five CITES Appendix II furbearer species included in the program. The following summarizes the approved States and Tribal programs by species: 39 States and 5 Tribes for bobcat, 28 States and one Tribe for river otter, one State for Alaska lynx, one State for Alaska wolf, and one State for Alaska brown bear.

The States and Tribes approved for the export of bobcat are listed in Table 1. Of these, fourteen States and three Tribes are within the range of the contiguous U.S. distinct population segment of the threatened Canada lynx. These states, identified in the lynx listing final rule (65 FR 16052), are: Colorado, Idaho, Maine, Michigan, Minnesota, Montana, New Hampshire, New York, Oregon, Utah, Vermont, Washington, Wisconsin, and Wyoming. The Tribes include the Klamath Tribe in Washington, the Penobscot Nation in Maine, and the Wind River Reservation in Wyoming. These approved States and Tribes and the number of export program tags used in 1990-1999 are listed in Table 2. The opening and closing dates for bobcat trapping seasons for these approved States and Tribes are listed below.

The following is a summary of the bobcat trapping season opening and closing dates for the 14 states and 3 tribes with lynx habitat and bobcat trapping under the Service's Program:

| STATE/TRIBE               | SEASON<br>OPENING | SEASON CLOSING                                             |
|---------------------------|-------------------|------------------------------------------------------------|
| Colorado                  | December 1        | February 28                                                |
| Idaho                     | January 1         | February 28                                                |
| Maine                     | December 1        | January 31                                                 |
| Michigan                  | October 25        | March 1                                                    |
| Minnesota                 | December 2        | January 7                                                  |
| Montana                   | December 1        | February 15 –<br>Districts 1-3; March 1<br>– Districts 4-7 |
| New Hampshire             | no OPEN season    | CLOSED to Bobcat                                           |
| New York                  | October 25        | February 15                                                |
| Oregon                    | December 1        | February 28                                                |
| Utah                      | November 22       | February 18                                                |
| Vermont                   | January 10        | February 7                                                 |
| Washington                | November 11       | January 31                                                 |
| Wisconsin                 | October 20        | December 31                                                |
| Wyoming                   | January 1         | March 1                                                    |
| Klamath Tribe             | November 15       | No info                                                    |
| Penobscot Nation          | October 15        | December 31                                                |
| Wind River<br>Reservation | December 1        | February 15                                                |

How will the Action be accomplished? The first part of the Action will be accomplished through the issuance of tags to each State or Tribe for distribution throughout their jurisdictions. The second and final part of the Action will be accomplished through the issuance of CITES export permits and the export of tagged skins.

What are the conservation measures? The Division of Management Authority will ask the States or Tribes to immediately report any incidental take of lynx under this activity. The Division of Management Authority will immediately advise the Region 6 and the Washington Office Endangered Species Division of this take. If or when the maximum take for each year in the ten-year period is reached, this will trigger a reinitiation of this consultation between the Division of Management Authority and the Division of Endangered Species.

### Status of the Species

The following information is abridged text, taken directly from the March 24, 2000 final rule (65 FR 16052) on the listing of this lynx population:

Lynx use large woody debris, such as downed logs and windfalls, to provide denning sites with security and thermal cover for kittens (McCord and Cardoza 1982; Koehler 1990; Koehler and Brittell 1990; Squires and Laurion 1999; J. Organ, U.S. Fish and Wildlife Service, *in litt.* 1999). For lynx den sites, the age of the forest stand does not seem as important as the amount of downed, woody debris available (Mowat *et al.* 1999). In Washington, lynx used *Pinus contorta* (lodgepole pine), *Picea* spp. (spruce), and *Abies lasiocarpa* (subalpine fir) forests older than 200 years with an abundance of downed woody debris for denning (Koehler 1990). A den site in Wyoming was located in a mature subalpine fir/lodgepole pine forest with abundant downed logs and a high amount of horizontal cover (Squires and Laurion 1999). A lynx den site found in Maine in 1999 was located in a forest stand in *Picea rubra* (red spruce) cover type that was logged in 1930 and again in the 1980s (J. Organ, *in litt.* 1999). The site is regenerating into hardwoods and has a dense understory (J. Organ, *in litt.* 1999). The dominant feature of the Maine site was the abundance of dead and downed wood (J. Organ, *in litt.* 1999).

The size of lynx home ranges varies by the animal's gender, abundance of prey, season, and the density of lynx populations (Hatler 1988; Koehler 1990; Poole 1994; Slough and Mowat 1996; Aubry *et al.* 1999; Mowat *et al.* 1999). Documented home ranges vary from 8 to 800 square kilometers (3 to 300 square miles) (Saunders 1963; Brand *et al.* 1976; Mech 1980; Parker *et al.* 1983; Koehler and Aubry 1994; Apps 1999; Mowat *et al.* 1999; Squires and Laurion 1999). Preliminary research supports the hypothesis that lynx home ranges at the southern extent of the species' range are generally large compared to those in the northern portion of the range in Canada (Koehler and Aubry 1994; Apps 1999; Squires and Laurion 1999).

Lynx are highly specialized predators whose primary prey is the snowshoe hare (*Lepus americanus*), which has evolved to survive in areas that receive deep snow (Bittner and Rongstad 1982). Snowshoe hares use forests with dense understories that provide forage, cover to escape from predators, and protection during extreme weather (Wolfe *et al.* 1982; Montney 1986; Hodges 1999a, 1999b). Lynx concentrate their hunting activities in areas where hare activity is relatively high (Koehler *et al.* 1979; Parker 1981; Ward and Krebs 1985; Major 1989; Murray *et al.* 1994; O'Donoghue *et al.* 1997, 1998a).

The association between lynx and snowshoe hare is considered a classic predator-prey relationship (Saunders 1963; van Zyll de Jong 1966; Quinn and Parker 1987). In northern Canada and Alaska, lynx populations fluctuate on approximately 10-year cycles that follow the cycles of hare populations (Elton and Nicholson 1942; Hodges 1999a, 1999b; McKelvey *et al.* 1999b). Generally, researchers believe that when hare populations are at

their cyclic high, depletion of food resources exacerbated by predation cause hare populations to decline drastically (Buehler and Keith 1982; Krebs *et al.* 1995; O'Donoghue *et al.* 1997). Snowshoe hare provide the quality prey necessary to support high-density lynx populations (Brand and Keith 1979). Lynx also prey opportunistically on other small mammals and birds, particularly when hare populations decline (Nellis *et al.* 1972; Brand *et al.* 1976; McCord and Cardoza 1982; O'Donoghue 1997, 1998a). Red squirrels (*Tamiasciurus hudsonicus*) are an important alternate prey (O'Donoghue 1997, 1998a; Apps 1999; Aubry *et al.* 1999). In the Yukon, lynx shifted to red squirrels when hare numbers began to decline (O'Donoghue 1998a, 1998b). However, a shift to alternate food sources may not compensate for the decrease in hares consumed (Koehler and Aubry 1994). In northern regions, when hare densities decline, the lower quality diet causes sudden decreases in the productivity of adult female lynx and decreased survival of kittens, which causes the numbers of breeding lynx to level off or decrease (Nellis *et al.* 1972; Brand *et al.* 1976; Brand and Keith 1979; Poole 1994; Slough and Mowat 1996; O'Donoghue *et al.* 1997).

Relative densities of snowshoe hares at southern latitudes are generally lower than those in the north, which has led to differing interpretations of the population dynamics of snowshoe hare populations. Snowshoe hares are generally associated with conifer forest cover types (Hodges 1999b). Relatively low snowshoe hare densities at southern latitudes are likely a result of the naturally patchy, transitional boreal habitat at southern latitudes that prevents hare populations from achieving densities similar to those of the expansive northern boreal forest (Wolff 1980; Buehler and Keith 1982; Koehler 1990; Koehler and Aubry 1994). Additionally, the presence of more predators and competitors of hares at southern latitudes may inhibit the potential for high-density hare populations with extreme cyclic fluctuations (Wolff 1980). If snowshoe hare populations in southern boreal forests do fluctuate (Hodges 1999b), then southern lynx populations also may be expected to fluctuate. Therefore, lynx densities at the southern part of the range never achieve the high densities that occur in the northern boreal forest (Aubry *et al.* 1999).

Lynx population dynamics in the contiguous United States may not be the same as in the northern boreal forests of Canada and Alaska. Regarding lynx in the northern boreal forests of Canada and Alaska, northern lynx populations undergo extreme fluctuations in response to snowshoe hare population cycles; lynx disperse when hare populations decline; lynx are capable of dispersing long distances; recruitment of young into the population seems to cease during cyclic lows of snowshoe hare populations; and lynx maintain home ranges (Mowat *et al.* 1999). We do not know the extent to which the northern lynx populations influence lynx occurrence in the contiguous United States. Because of the naturally fragmented habitat and lower density hare populations in the contiguous United States, we expect lynx in the contiguous United States to occur at naturally lower densities than in the north.

In the listing rule, the Service concluded that historic and current lynx densities in the contiguous United States are naturally low relative to lynx densities in the northern boreal forest.

### **Environmental Baseline**

Data that would help us determine whether resident populations of lynx existed historically or exist currently in many States are generally unavailable. Given the available data and the propensity of lynx to disperse, at this time it is impossible to determine with certainty whether reports of lynx in many States were: (1) merely dispersing animals from northern populations that were effectively lost from the metapopulation because they did not join or establish resident populations, (2) animals that were a part of a resident population that persisted for many generations, or (3) a mixture of both members of resident populations and dispersing animals.

There are several plausible explanations for a lack of lynx records, such as (1) the true absence of lynx, (2) lynx populations are at a cyclic low, (3) lack of adequate surveys, or (4) decreased trapper effort. In the listing rule, the Service suspected that some areas in the contiguous United States naturally act as "sinks" for lynx where mortality is higher than recruitment and lynx are lost from the overall population (McKelvey *et al.* 1999a). Sink habitats are most likely those places on the periphery of the southern boreal forest in the contiguous United States where habitat becomes more fragmented and more distant from larger lynx populations.

Thus, historic lynx data in the contiguous United States are scarce and exist primarily in the form of trapping records. Data showing few lynx trapped could be a result of decreased trapper effort, not necessarily a decreased population. These factors hamper our understanding of lynx population dynamics and status in the contiguous United States and preclude us from drawing definitive conclusions about lynx population trends. Data are too incomplete to infer much beyond simple occurrence (McKelvey *et al.* 1999b) and distribution of lynx in the contiguous United States. However, despite these difficulties, trapping data is the best information available on lynx presence throughout much of its range in the contiguous United States and therefore was relied upon in our analysis. The Appendix has information from the listing rule concerning the effect of trapping on lynx.

**Trapping in 2001.** Prior to the bycatch of one lynx in a Montana bobcat trap, the Service had no records of the incidental take of a lynx from approved States and Tribes in the CITES Export Program (Anon., 2000).

The following information on this one reported bycatch of lynx in a bobcat set is excerpted from the February 14, 2001 amendment to the Biological Assessment.

"...an edited summary of the incidental take of this lynx in the Montana trap. The summary is excerpted from the record of a conversation between a Service biologist and the Montana State Furbearer Coordinator (February 8, 2001), and a follow-up email between the same individuals (February 12, 2001). 'A [young] female, radio-collared

lynx was taken in a bobcat set on January 23, 2001, in Trapping District 2 (west central Montana). She was found dead near the trap with a swollen foot. It is not clear whether she pulled herself clear or if the trapper released her. It is also unknown what the cause of death was. Researchers have the body for necropsy.' Bobcat trapping quotas [in Montana] are set for each of the seven trapping districts. If the quota is met prior to the scheduled end of the trapping season, the district is closed to further trapping. Trapping districts 1, 2, and 3 are in discussion on trapping in Montana, [Montana] said that they had a strong trapper community. There is a lot of interest, both in trapping and in using hounds. Prices for Montana bobcats is about \$80 to \$120. Other fur prices also remain high enough to make the effort worth it."

The following excerpted email report with additional information on the incidental take was submitted by Division of Management Authority to Endangered Species on March 29, 2001 as required by the February 28, 2001, amended biological opinion.

"The following summarizes the incidental take based on a March 28, 2001, report submitted by the Furbearer Coordinator of the Montana Fish, Wildlife and Parks, and a [cited above] February 8, 2001, email record of a conversation that a Service CITES Policy Specialist/Biologist had with the same Montana State Furbearer Coordinator regarding the incidental take of a lynx in a bobcat set trap. According to these accounts, the incidentally taken lynx was a radio-collared yearling female ... considered to be in relatively poor physical condition upon recovery, as assessed by the United States Forest Service lynx project personnel on the date of recovery." He [the coordinator] further reported that, "...According to our [Montana's] investigating game warden, this incidental capture was reported by United States Forest Service personnel on January 1, 2001. This radio-collared lynx was a lynx project animal that had begun transmitting a mortality signal. The lynx was recovered dead on January 1, 2001, with an injury (laceration) on it's back left leg, lying approximately 30 yards away from a bobcat set. The lynx appeared to have been caught in a #4 double-spring foothold trap and had been released earlier by the trapper. During a follow up interview, the trapper indicated he had captured a small radio-collared lynx and had released it apparently uninjured on January 16, 2001. The trapper did not reset his trap while the lynx was in the area."

The carcass has been retained by the lynx project but a necropsy has not yet been conducted to assess the cause of mortality. Division of Management Authority will periodically follow-up with the Montana State Furbearer Coordinator to check on the results of the necropsy and will provide this information as soon as it is available. The bobcat quota of 180 bobcats was not reached in Trapping District 2 during the 2000-2001 season and remained open until the season closed on February 15, 2001."

Other bycatch of lynx that occurred through trapping in 2001:

Montana -

One lynx killed in a conibear trap legally set for a wolverine; one female caught by the toe in a leghold (size 0 or 00) set for a marten; Fall 2000: a lynx was poached by a lion hunter; a trapper caught a lynx this year and let it go; a collared kitten was poached early in the lion season.

Maine --

Lynx broke its leg in a leghold set for a coyote; Maine Fish and Wildlife received video footage of a lynx released from a leghold set for a coyote.

Tagging Trends, Market Demand, and Skin Prices

Ten years of tagging data from 1990-1999 are available from requisite reports submitted by all participating States and Tribes under the CITES Export Program for Appendix II Furbearers. Table 1 lists the numbers for all bobcats tagged in the Program in all approved States and Tribes and Table 2 for lynx States and Tribes only. Figure 1 illustrates tagging trends over this period for all States and Tribes compared to the lynx States and Tribes.

The tagging trends in Figure 1 for all bobcat States and Tribes and lynx States and Tribes are roughly comparable. When comparing these bobcat tagging data of all States and Tribes to another CITES furbearer in the program, the river otter, bobcat tagging data from all States and Tribes fluctuates approximately the same as otters over the same ten year period (Figure 2).

The number of skins tagged in the lynx States and Tribes remained fairly steady in the ten year period fluctuating between 5,338 and 9,857 skins tagged and with a median of 8,037 skins tagged in 1991 (Table 2). The annual average for bobcat skins tagged over this period was about 8,100 each year in the 14 States and Tribes where lynx occur.

Table 3 lists all lynx States and Tribes and their respective 10-year average for tags skins. Figure 3 shows the average number of skins over the ten year period of 1990-1999 for all lynx State and Tribes in ascending order.

More than half of the tagged skins (*i.e.*, 54 percent) came from only 4 of the 17 lynx States and Tribes or those tagging an annual average of more than 3,000 skins: Colorado, Idaho, and Maine, and the Klamath Tribe in Washington. These States and Tribes occur at the northern-most part of the bobcat's United States range and these bobcat probably produce the heavier and more desirable skins sought after by the limited market (Anon, 2001a)

Based upon conversations with a few state furbearer managers and the request for additional tags from others, the number of skins tagged in 2001 may have increased; these data will not be available until next year. The 2001 North American average auction price for quality skins increased to \$41.62 in February 2001 from \$32.34 in March 2000 (Anon., 2001a). However, these price data should be used cautiously. According to the North American Fur Auctions, the overall market demand for bobcat skins is erratic and that demand is selective, based upon the quality and color of skins (Anon., 2001b; Anon., 2001c). Although prices for other wild furs are increasing in the region, only about a half or less of bobcat skins presented for auction were actually sold at auction in 2000 and 2001 (Anon., 2001a). North American Fur Auctions reports for Canada and the United States indicate that bobcat skins (marketed as lynx cat in the fur trade) are some, "...of the most difficult to sell over the past few seasons"(Anon., 2001b; Anon., 2001c).

### Effects of the Action

The Appendix has excerpts from the March 24, 2000 final rule listing the lynx (65 FR 16052) that shows the potential threat of overutilization/trapping to the lynx to be minimal. The rule states that, "The threat to resident lynx from legal trapping for other species may be limited in many areas because bobcat or coyote trapping generally occurs outside of areas where lynx would be found, although we know that incidental capture occurs (Wydeven 1993; M. DonCarlos *in litt.* 1994; R. Nancy, United States Forest Service, pers. comm. 1999). Although we are concerned about the loss of lynx that are incidentally captured, we have no information to indicate that the loss of these individuals has negatively affected the overall ability of the contiguous United States Distinct population segment to persist. Additionally, we believe that lynx have been incidentally trapped throughout the past, and still they persist throughout most of their historic range. In summary, we conclude that past and present overutilization is not a factor threatening lynx."

In the 20 years of the CITES Export Program, there has been one bycatch of lynx reported. Based upon available information, it is estimated that bycatch of lynx in traps set for bobcat for the next ten years for this Export Program would be uncommon. As excerpted from the February 14, 2001 amendment to the original May 19, 2000 Biological Assessment, "more than 7,500 bobcat skins were tagged in 1998, the last year in which the Division of Management Authority has complete data. It is estimated that at least this number were tagged in the 2000-2001 season because of the increase in the 2001 market price of skins, noted above. Therefore at a minimum, there were at least 7,500 successful bobcat traps set in the 2000-2001 season with one bycatch of lynx reported. This bycatch represents a 1:7,500 ratio, if considering only successful bobcat traps set."

It is unknown whether unreported lynx bycatch is occurring, and if it is occurring, the numbers of lynx that may be affected. In an April 27, 2001 telephone conversation between Bob Pine of Washington Office Division of Consultation, HCPs, Recovery and State Grants and lynx biologist Lori Nordstrom of the Region 6, Montana Fish and Wildlife Office, Lori stated that due

to the rarity of the lynx in the southern part of the range, that no more than one additional, unreported lynx was probably trapped in a bobcat set in the 2000-2001 trapping season and may potentially have been killed. Therefore, the expected lynx bycatch in bobcat sets that includes both reported and unreported trapping would be two lynx killed for the 2000-2001 season and the total reported and unreported bycatch of lynx for all trap sets would be expected to be 18 lynx. Some of these 18 lynx were released alive but injured from traps, and may have survived. Neither the actual reported number of one lynx trapped and killed as bobcat set bycatch or the addition of another unreported killed bycatch of lynx would significantly effect the listed distinct population segment.

**Long-term effects.** The market for bobcat skins should remain fairly steady for the next ten years as reflected by the past 10-year period, reviewed above. Since harvest activity is undoubtedly related to market demand and prices, the annual bobcat tagging data for 2001-2010 will also probably remain equally steady at the previous 10-year median, and average, of about 8,000 tagged skins for the States and Tribes where bobcat trapping is allowed and lynx are found. The tagging data may fluctuate in 2001-2010, as in the previous years, between about 5,000 to 10,000 skins. Extrapolating information in the Appendix and Figures 1 and 3, and from the 2001 trapping season, the small probability of lynx being caught in bobcat traps would indicate that bycatch of lynx in bobcat traps should continue to be uncommon over the next 10 years.

**Summary.** In summary, based on (1) trapping information from the 2000-2001 season, (2) information contained in Figures 1 and 3, (3) information contained in the lynx listing rule, and (4) an April 27, 2001, conversation with a Service lynx biologist, no more than twice the number of lynx trapped as bycatch, or two lynx, are expected to be killed annually and two are expected to be injured annually for the 10-year period of the proposed action. As stated previously, neither the actual reported number of one lynx trapped as bobcat set bycatch, that represents a 1:7,500 ratio if considering only successful bobcat traps set, nor the addition of another unreported bobcat-set bycatch of lynx, would significantly affect the listed lynx distinct population segment.

#### **Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Trapping for non-CITES regulated species such as coyote, wolverine, and martin are expected to result in mortality and harassment of lynx. In the 2000-2001 season, eight lynx were trapped as bycatch in sets for non-CITES regulated species. A Service lynx biologist (Lori Nordstrom, April 27, 2001 telephone conversation) has stated that as many as an additional eight lynx may have been trapped as bycatch but not reported.

Forest thinning and fire suppression are likely to result in the loss of lynx habitat. Habitat connectivity is reduced by increasing urbanization and high volume traffic highways. Together, these may significantly affect the survival of the lynx.

### **Conclusion**

After reviewing the current status of the affected species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Division of Consultation, HCPs, Recovery and State Grants's biological opinion that the Cites Export Program for Appendix II Furbearer Species as proposed, is not likely to jeopardize the continued existence of the contiguous United States distinct population segment of the Canada lynx. Critical habitat for the lynx has not been designated.

### **INCIDENTAL TAKE STATEMENT**

Section 9 of the Act, and Federal regulation pursuant to section 4(d) of the Act, prohibits the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this **Incidental Take Statement**.

The measures described below are nondiscretionary and must be undertaken by the Division of Management Authority so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Division of Management Authority has a continuing duty to regulate the activity covered by this incidental take statement. If the Division of Management Authority (1) fails to adhere to the terms and conditions of the incidental take statement, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

### **Amount or Extent of Incidental Take**

The Division of Consultation, HCPs, Recovery and State Grants anticipates that incidental take of lynx will be difficult to detect because there is little likelihood that trappers would report bycatch of lynx. The Service, therefore, anticipates the following levels of take as a result of this proposed project.

Incidental take for lynx is expected in the form of: two (2) lynx may be killed and two (2) injured annually due to trapping over the 10-year term of this biological opinion.

### **Effect of the Take**

In the accompanying biological opinion, the Division of Consultation, HCPs, Recovery and State Grants determined that this level of anticipated take is not likely to jeopardize the continued existence of the lynx distinct population segment.

### **Reasonable and Prudent Measures**

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the effects of incidental take that might otherwise result from the proposed action. This biological opinion will expire 10 years from the date of issuance. Issuance of a new opinion will be subject to evaluation of the recovery of the species and the existence of additional documents providing protection to the lynx such as a 4(d) rule.

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize the impact of take on the lynx:

When issuing CITES export tags for bobcats to the states or tribes, provide the states and tribes with information on lynx identification, life-history, recovery needs, and references to current and ongoing methodologies to reduce mortality and injury to lynx when trapping bobcat.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, Division of Management Authority must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

The following terms and conditions implement the reasonable and prudent measure:

- (1) The Division of Management Authority shall prepare a brochure containing information on lynx (a) identification (b) life-history, (c) recovery needs, and

(d) references to current and ongoing methodologies allowing trappers to reduce mortality and injury to lynx when trapping bobcat. A draft of this brochure shall be provided to the following for approval prior to finalization and distribution: U.S. Fish and Wildlife Service, Chief, Division of Consultation, HCPs, Recovery and State Grants, 4401 N. Fairfax Drive, Room 420, Arlington, VA 22203; and, U.S. Fish and Wildlife Service, Montana Fish and Wildlife Office, 100 North Park, Suite 320, Helena MT, 59604. This brochure shall be updated as new information becomes available.

- (2) The Division of Management Authority shall issue one (1) copy of the finalized brochure for each trapper receiving a tag for bobcat issued to the states or tribes. If the brochure is revised at a later date, this procedure will again be followed. A letter shall accompany the brochures and tags recommending that the State or Tribe should provide a copy of the brochure to bobcat trappers on a one-time basis and again if brochure is revised.

#### **Reporting Requirements**

The Chief, Consultation, HCPs, Recovery and State Grants and the Montana Fish and Wildlife Office, Field Supervisor are to be notified within ten working days of the finding of any trapped lynx or any unanticipated harm to the lynx. The Washington Office Consultation, HCPs, Recovery and State Grants contact person for this is the Chief, Division of Consultation, HCPs, Recovery and State Grants at (703) 358-2171 and the Montana Fish and Wildlife Office contact person is the Field Supervisor at (406) 449-5225. Any dead or severely injured lynx shall be transferred to the nearest state, tribal, or federal wildlife agency. Carcasses become the property of the state or tribe for education purposes.

#### **CONSERVATION RECOMMENDATION**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Division of Consultation, HCPs, Recovery and State Grants recommends the following additional action:

The Division of Management Authority should continue discussions with the states and tribes on developing or using current methods to decrease mortality and injury to lynx resulting from bobcat trapping

In order for the Division of Consultation, HCPs, Recovery and State Grants to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats,

we request notification of the implementation of any conservation recommendations.

#### REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or, (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, in this instance, one lynx is authorized to be taken, any operations causing such take must cease pending reinitiation.

## Literature Cited

- Agee, J.K. 1999. Disturbance ecology of North American boreal forests and associated northern mixed/subalpine forests. *In* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, *et al.*, tech. eds. The scientific basis for lynx conservation in the contiguous United States. Gen. Tech. Rpt. RMRS-GTR-30. Ogden, UT: U.S. Dept. Agriculture, Forest Service, Rocky Mountain Research Station.
- Anonymous. 2000. Biological Assessment on the Canada Lynx of the CITES Export Program for Appendix III Furbearer Species. Dated May 19, 2000. U.S. Fish and Wildlife Service, International Affairs, Division of Management Authority, Arlington, VA. 14 pages.
- Anonymous. 2001a. North American Fur Auctions Results. North American Fur Auctions Website ([www.patrappers.com/nafa.htm](http://www.patrappers.com/nafa.htm)) 9 pages.
- Anonymous. 2001b. Canadian Wildfur Market Report: 2000/2001. North American Fur Auctions Website ([www.nafa.ca/wildfur/cdn\\_report.asp](http://www.nafa.ca/wildfur/cdn_report.asp)). 3 pages.
- Anonymous. 2001c. U.S. Wildfur Market Report: 2000/2001. North American Fur Auctions Website ([www.nafa.ca/wildfur/usa\\_report.asp](http://www.nafa.ca/wildfur/usa_report.asp)). 3 pages.
- Apps, C.D. 1999. Space-use, diet, demographics, and topographic associations of lynx in the southern Canadian Rocky Mountains: a study. *In* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, *et al.*, tech. eds. The scientific basis for lynx conservation in the contiguous United States. Gen. Tech. Rpt. RMRS-GTR-30. Ogden, UT: U.S. Dept. Agriculture, Forest Service, Rocky Mountain Research Station.
- Aubry, K.B., G.M. Koehler, J.R. Squires. 1999. Ecology of Canada lynx in southern boreal forests. *In* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, *et al.*, tech. eds. The scientific basis for lynx conservation in the contiguous United States. Gen. Tech. Rpt. RMRS-GTR-30. Ogden, UT: U.S. Dept. Agriculture, Forest Service, Rocky Mountain Research Station.
- Bittner, S.L. and O.J. Rongstad. 1982. Snowshoe hare and allies. *in* J.A. Chapman and G.A. Feldhamer (eds.). Wild mammals of North America biology, management and economics. Johns Hopkins University Press, Baltimore, MD.
- Brand, C.J., and L.B. Keith. 1979. Lynx demography during a snowshoe hare decline in Alberta. *J. Wildl. Manage.* 43:827-849.
- Brand, C.J., L.B. Keith, C.A. Fischer. 1976. Lynx responses to changing snowshoe hare densities in central Alberta. *J. Wildl. Manage.* 40:416-428.

- Buehler, D.A., and L.B. Keith. 1982. Snowshoe hare distribution and habitat use in Wisconsin. *Can. Field-Nat.* 96:19-29.
- Elton, C., and M. Nicholson. 1942. The 10-year cycle in numbers of the lynx in Canada. *J. Anim. Ecol.* 11:215-244.
- Hatler, D.F. 1988. A lynx management strategy for British Columbia. Prep. for BC Ministry of Environment, Victoria.
- Hodges, K.E. 1999a. The ecology of snowshoe hares in northern boreal forests. *In* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, *et al.*, tech. eds. *The scientific basis for lynx conservation in the contiguous United States*. Gen. Tech. Rpt. RMRS-GTR-30. Ogden, UT: U.S. Dept. Agriculture, Forest Service, Rocky Mountain Research Station.
- Hodges, K.E. 1999b. Ecology of snowshoe hares in southern boreal and montane forests. *In* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, *et al.*, tech. eds. *The scientific basis for lynx conservation in the contiguous United States*. Gen. Tech. Rpt. RMRS-GTR-30. Ogden, UT: U.S. Dept. Agriculture, Forest Service, Rocky Mountain Research Station.
- Koehler, G.M. 1990. Population and habitat characteristics of lynx and snowshoe hares in north-central Washington. *Can. J. Zool.* 68:845-851.
- Koehler, G.M., and K.B. Aubry. 1994. Chapter 4: Lynx. Pages 74-98 *in* American Marten, Fisher, Lynx, and Wolverine in the Western United States, L.F. Ruggiero, K.B. Aubry, S.W. Buskirk, L.J. Lyon, W.J. Zielinski, eds. U.S. Forest Service, Gen. Tech. Rpt. RM-251.
- Koehler, G.M., and J.D. Brittell. 1990. Managing spruce-fir habitat for lynx and snowshoe hares. *J. Forestry* 88:10-14.
- Koehler, G.M., M.G. Hornocker, H.S. Hash. 1979. Lynx movements and habitat use in Montana. *Can. Field-Nat.* 93:441-442.
- Krebs, C.J., S. Boutin, R. Boonstra, A.R.E. Sinclair, J.N.M. Smith, M.R.T. Dale, K. Martin, R. Turkington. 1995. Impact of food and predation on the snowshoe hare cycle. *Science* 269:1112-1115.
- Major, A.R. 1989. Lynx, *Lynx canadensis canadensis* (Kerr) predation patterns and habitat use in the Yukon Territory, Canada. Unpubl. M.S. Thesis, State University of New York, Syracuse.

- McCord, C.M., and J.E. Cardoza. 1982. Bobcat and lynx. *In* J.A. Chapman and G.A. Feldhamer (eds.). *Wild mammals of North America biology, management and economics*. Johns Hopkins University Press, Baltimore, MD.
- McKelvey, K.S., S.W. Buskirk, C.J. Krebs. 1999a. Theoretical insights into the population viability of lynx. *In* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, *et al.*, tech. eds. *The scientific basis for lynx conservation in the contiguous United States*. Gen. Tech. Rpt. RMRS-GTR-30. Ogden, UT: U.S. Dept. Agriculture, Forest Service, Rocky Mountain Research Station.
- McKelvey, K.S., K.B. Aubry, Y.K. Ortega. 1999b. History and distribution of lynx in the contiguous United States. *In* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, *et al.*, tech. eds. *The scientific basis for lynx conservation in the contiguous United States*. Gen. Tech. Rpt. RMRS-GTR-30. Ogden, UT: U.S. Dept. Agriculture, Forest Service, Rocky Mountain Research Station.
- Mech, L.D. 1980. Age, sex, reproduction, and spatial organization of lynxes colonizing northeastern Minnesota. *J. Mammal.* 61:261-267.
- Monthey, R.W. 1986. Responses of snowshoe hares, *Lepus americanus*, to timber harvesting in northern Maine. *Can. Field-Nat.* 100:568-570.
- Mowat, G., K.G. Poole, M. O'Donoghue. 1999. Ecology of lynx in northern Canada and Alaska. *In* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, *et al.*, tech. eds. *The scientific basis for lynx conservation in the contiguous United States*. Gen. Tech. Rpt. RMRS-GTR-30. Ogden, UT: U.S. Dept. Agriculture, Forest Service, Rocky Mountain Research Station.
- Murray, D.L., S. Boutin, M. O'Donoghue. 1994. Winter habitat selection by lynx and coyotes in relation to snowshoe hare abundance. *Can. J. Zool.* 72:1444-1451.
- Nellis, C.H., S.P. Wetmore, L.B. Keith. 1972. Lynx-prey interactions in central Alberta. *J. Wildl. Manage.* 36:320-329.
- O'Donoghue, M., S. Boutin, C.J. Krebs, E.J. Hofer. 1997. Numerical responses of coyotes and lynx to the snowshoe hare cycle. *Oikos* 80:150-162.
- O'Donoghue, M., S. Boutin, C.J. Krebs, D.L. Murray, E.J. Hofer. 1998a. Behavioural responses of coyotes and lynx to the snowshoe hare cycle. *Oikos* 82:169-185.
- O'Donoghue, M., S. Boutin, C.J. Krebs, G. Zuleta, D.L. Murray, E.J. Hofer. 1998b. Functional responses of coyotes and lynx to the snowshoe hare cycle. *Ecology* 79:1193-1208.
- Osgood, F.L., Jr. 1938. The mammals of Vermont. *J. Mammal.* 19:435-441.

- Parker, G.R. 1981. Winter habitat use and hunting activities of lynx (*Lynx canadensis*) on Cape Breton Island, Nova Scotia. *in* J.A. Chapman and D. Pursley (eds.) Proc. 1980 Worldwide Furbearer Conf., Frostburg, MD.
- Parker, G.R., J.W. Maxwell, L.D. Morton, G.E.J. Smith. 1983. The ecology of the lynx (*Lynx canadensis*) on Cape Breton Island. *Can. J. Zool.* 61:770-786.
- Poole, K.G. 1994. Characteristics of an unharvested lynx population during a snowshoe hare decline. *J. Wildl. Manage.* 58:608-618.
- Poole, K.G. 1997. Dispersal patterns of lynx in the Northwest Territories. *J. Wildl. Manage.* 61:497-505.
- Quinn, N.W.S., and G. Parker. 1987. Lynx. *in* M. Novak, J.A. Barber, M.E. Obbard, B. Malloch (eds.). *Wild furbearer management and conservation in North America.* Ontario Ministry of Natural Resources
- Saunders, J.K. 1963. Food habits of the lynx in Newfoundland. *J. Wildl. Manage.* 27:384-390.
- Slough, B.G. and G. Mowat. 1996. Population dynamics of lynx in a refuge and interactions between harvested and unharvested populations. *J. Wildl. Manage.* 60:946-961.
- Squires, J.R. and T. Laurion. 1999. Lynx home range and movements in Montana and Wyoming: preliminary results. *in* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, et al., tech. eds. *The scientific basis for lynx conservation in the contiguous United States.* Gen. Tech. Rpt. RMRS-GTR-30. Ogden, UT: U.S. Dept. Agriculture, Forest Service, Rocky Mountain Research Station.
- van Zyll de Jong, C.G. 1966. Food habits of the lynx in Alberta and the Mackenzie District, N.W.T. *Can. Field-Nat.* 80:18-23.
- Ward, R.M.P., and C.J. Krebs. 1985. Behavioral responses of lynx to declining snowshoe hare abundance. *Can. J. Zool.* 63:2817-2824.
- Wolfe, M.L., N.V. Debyle, C.S. Winchell, T.R. McCabe. 1982. Snowshoe hare cover relationships in northern Utah. *J. Wildl. Manag.* 49:662-670.
- Wolff, J.O. 1980. The role of habitat patchiness in the population dynamics of snowshoe hares. *Ecol. Monog.* 50:111-130.
- Wydeven, A.P. 1993. Rare mammal observations 1992. *in* Dhuey, B. (ed.) *Wisconsin wildlife surveys.* Wisconsin Department of Natural Resources, Monona.



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Washington, D.C. 20240



DEC 22 2014

IN REPLY REFER TO:  
FWS/DMA/CEP 1-07

Mr. Jeff Hagener, Director  
Montana Department of Fish, Wildlife and Parks  
P. O. Box 200701  
Helena, MT 59620-0701

Dear Mr. Hagener:

In consultation with our Division of Scientific Authority, we have reviewed the request for export approval under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) for gray wolf (*Canis lupus*) legally taken by wolf hunters or trappers within the State of Montana. Prior to approving export of species of wildlife included in Appendix II of CITES, such as gray wolf, two findings must be made. The Division of Scientific Authority (DSA) must advise the Division of Management Authority (DMA) that such export will not be detrimental to the survival of the species, and DMA must be able to make a finding that specimens to be exported have not been obtained in violation of laws for their protection.

Montana has specific measures to control gray wolf harvest. Your regulations dictate harvest season length, harvest methods, bag limits, wolf trapper certification requirements, and mandatory reporting. Furthermore, Montana is continually reviewing its gray wolf harvest program to account for new findings and advice from experts in gray wolf management. Your gray wolf management program ensures long-term sustainable use of the species and supports gray wolf conservation goals. State, Federal, and tribal wildlife enforcement agents are well trained and are constantly updated about changes in wildlife laws regarding harvest, transport, and sale of gray wolves and their products.

The State of Montana requested CITES authorization for the export of gray wolves. DSA has advised us that, for the 2014-2015 harvest seasons, the export of gray wolves legally taken within the State of Montana during Montana's open gray wolf hunting and trapping seasons will not be detrimental to the survival of the species. The information submitted by the State of Montana to DMA and the mandatory tagging requirements for gray wolves legally harvested within Montana provide sufficient verification that a gray wolf was legally taken under the jurisdiction of the State of Montana for the 2014-2015 harvest seasons.

On the basis that both DSA and DMA criteria have been satisfied, we are approving Montana's program for gray wolf export for specimens legally harvested within Montana, under the jurisdiction of Montana, subject to the following conditions:

- CITES tags may only be applied to legally acquired gray wolf specimens taken during Montana's 2014-2015 open gray wolf hunting and trapping seasons. They may not be applied to specimens taken on any Tribal lands.
- CITES tags may not be applied to gray wolf specimens obtained as a result of road kills, incidental take, or any other means other than legal hunting and trapping during Montana's 2014-2015 open gray wolf hunting and trapping seasons.
- CITES tags may not be applied to gray wolf specimens obtained pursuant to wolf–livestock interactions or depredation or protection of human life incidents.
- CITES tags must be applied to all gray wolf pelts to be exported from the United States within a minimum time after take, as specified by Montana, and such time should be as short as possible to minimize movement of untagged pelts. Typically, the time between take and tagging should not exceed 90 days. The tag must be permanently attached as authorized and prescribed by Montana. Tag application must be by State officials, State-registered dealers, or State-licensed takers. Montana may ship valid unused tags to State-registered dealers or State-licensed takers for the sole purpose of applying such tags to legally acquired gray wolf specimens. Montana must have a process in place to document that tags applied by State-registered dealers or State-licensed takers are applied to legally acquired gray wolf specimens. State-registered dealers or State-licensed takers allowed by Montana to attach tags must account for tags received and must return unused tags to Montana within a specified time after the gray wolf taking season closes. Typically, the time allowed for returning unused tags should not exceed 45 days. CITES tags may not be transferred from the registered dealer or licensed taker to whom they were issued to another dealer or taker.
- We require Montana to report to DMA any incidental take of a Canada lynx (*Lynx canadensis*) that occurs as a result of attempting to take gray wolf by trapping. Any incidental take of Canada lynx that occurs as a result of attempting to take gray wolf by trapping must be reported to our office within ten working days of the take. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or the attempt to engage in any such activity.

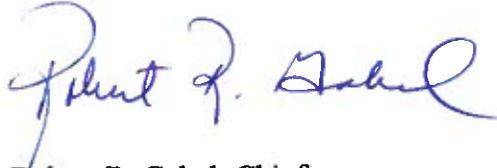
Once a State or Tribe has been approved into our CITES export program, we monitor the program annually based on a report that must be submitted by the State or Tribe to DSA and DMA, prior to each harvest season. Our reporting requirements are detailed in 50 CFR 23.69(b)(3). This approval is for the 2014-2015 gray wolf harvest seasons only. Based on the State of Montana's continuing monitoring program, and annual reports to be submitted to DMA by the State of Montana, we will determine if there need to be any adjustments (including multi-year approval) to the program in subsequent years.

Mr. Jeff Hagener

3

If you have any questions, please contact Clifton A. Horton, U.S. Fish & Wildlife Service Headquarters, MS: IA, 5275 Leesburg Pike, Falls Church, VA 22041-3803; by fax 703-358-2298; or by E-mail, [clifton\\_horton@fws.gov](mailto:clifton_horton@fws.gov).

Sincerely,



Robert R. Gabel, Chief  
Division of Management Authority

cc: Association of Fish and Wildlife Agencies  
Division of Scientific Authority  
Brian Giddings, Montana Department of Fish, Wildlife and Parks



# Montana Fish, Wildlife & Parks

Wildlife Division P.O Box 200701 Helena MT 59620

---

August 30, 2006

Lori Nordstrom  
Ecological Services  
US Fish & Wildlife Service  
585 Shepard Way  
Helena, MT 59601

Dear Lori:

Included in this correspondence are reported incidental captures of lynx in Montana during the 2004-05 and 2005-06 furbearer trapping/hunting seasons. I do not have any records of reported captures during the 2001-02 through 2003-04 seasons. Montana furbearer regulations require trappers to report incidental lynx captures within five (5) days of release of an uninjured animal and to contact FWP personnel within 24 hours if a lynx is injured or dead.

**2004-05:** I am aware of a single lynx that was captured and released during the winter trapping season. It was captured and released unharmed in the Middle Fork of the Flathead by a bobcat trapper. No legal description was available.

**2005-06:**

1. A Eureka trapper reported that on 12/12/05 he captured a female lynx in Brimstone Creek (Sec. 4 T33N R25W) in a foothold while trapping for bobcats. He released the lynx uninjured.
2. A Kalispell trapper reported that during December 2005 he caught a lynx in a foothold while trapping for bobcats in Fitzsimmons Creek (Sec. 4 T34N R24W). It was released uninjured.
3. A Eureka trapper reported on 1/02/06 he captured and killed a lynx in a snare that was set for wolverine in the Ten Lakes area (Sec. 6 T37N R24W). The carcass was recovered by FWP personnel.

Sincerely,

Brian Giddings  
State Furbearer Coordinator



# **Montana Fish, Wildlife & Parks**

Wildlife Division P.O Box 200701 Helena MT 59620

---

September 20, 2007

Shawn Sartorius  
Ecological Services  
US Fish & Wildlife Service  
585 Shepard Way  
Helena, MT 59601

Dear Shawn:

Here is our report of incidental captures of lynx in Montana during the 2006-07 furbearer trapping/hunting seasons. Montana furbearer regulations require trappers to report incidental lynx captures within five (5) days of release of an uninjured animal and to contact FWP personnel within 24 hours if a lynx is injured or dead.

1. A Seeley Lake area trapper reported that on 12/24/06 he captured a large male lynx in Uhler Creek (Sec. 18 T18N R16W) in a foothold trap while trapping for bobcats. He released the lynx uninjured.
2. Seeley Lake area lynx study research personnel reported that during February 2007 a radio-collared male lynx was found dead in the Fawn Creek drainage (UTM 305603 E, 5231479 N) as a result of being entangled in dog-hair tree branches from a Victor #1 foothold trap that may have been set for marten.

Although these are not incidental takes from trapping, two lynx were shot during the winter in the Seeley Lake area and Rick Branzell, USFWS Special Agent would have the information. Also, a lynx was found dead on the Paws Up Ranch near Potomac as a result of predation because it had multiple canine puncture wounds and a broken back.

Sincerely,

Brian Giddings  
State Furbearer Coordinator

## Lynx Incidental Capture Report

Report No. 2013-TRP004

Lynx ID: N/A

Name of Individual Reporting Capture: [REDACTED] trapper, [REDACTED]  
[REDACTED]

Name of Biologist/Warden Responding to Report: Warden Corporal Andrew Glidden

Type of Capture: Trap

*Set type:*

*Trap type and size:* Foothold – MB550 Offset

*Jaw spread and swivels:* 4.4 inches, 2 swivels

*Staking:* staked, 9 inch chain

*Bait:* Ground Beaver

*Lure:*

*Visibility of Bait:* None

*Legal Set?* Yes

Location of Capture: T9 R11 Wels, 522 Rd.

Wildlife Management District: 5

GPS Coordinates (UTM preferred): 566366N, 5139052W

GPS Map Datum (NAD 83 preferred): WGS84

Date of Capture: 10/23/13

Disposition of Lynx: Alive, released on-site

Age/Sex: unknown – released from trap by Wdn. Corp. Glidden

### Description of events

**Response:** At 1557, Biologist Amanda DeMusz contacted the lynx hotline to report the capture of a lynx and initiate a response. Warden Service was notified and at 1630, Corp. Glidden responded to the call from Sgt. Chandler to respond to the lynx capture. Corp. Glidden called the lynx hotline and discussed with biologist Jen Vashon the appropriate response. Given Corp. Glidden's closer proximity to the site, the late hour and more than 3 hours before a biologist could reach the site, it was decided that Wdn Glidden should respond, assess the potential for injury, and release the lynx if uninjured. Corp. Glidden and Jen Vashon discussed procedures for assessing the animal for injury and releasing if uninjured. Jen Vashon notified USFWS Special Agent Eric Holmes. The lynx was released and Corp. Glidden examined the trap and interviewed the trapper for compliance with State trapping laws. The set was legal.

**Weather conditions:** Overnight: 30 degrees F with clear skies. Daytime: 40 degrees F with clear skies

**Disturbance:** Vehicle traffic

**Assessment of the lynx:** Warden Corp. Glidden observed the lynx prior to release, it was captured by the right front paw, the lynx was very calm, and there was no obvious injury. Corp. Glidden and the trapper released the lynx using a sheet of plywood with a notch cut-out at the bottom. The notch allows the observer to remove the trap while the sheet of plywood acts as a barrier between the cat and the observer. Upon release, the lynx ran into the woods.

See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information.  
Report prepared by: Jennifer Vashon 11/4/13;

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER \*advise caller to minimize disturbance to the animal\*

Date 10/23/2013 Time 2200 IFW Staff collecting caller info: Andrew P Glidden  
 Trapper/Individual Reporting [REDACTED]  
 Address [REDACTED] Phone number: [REDACTED]  
 Town: [REDACTED] LYNX ID (w/o disturbing cat)  
 Location 522 Road T9-R11 wels 566362W/5139052W  
 GPS coordinates 68 8 11.9 w 46 24 6.4 N  
 GPS datum WGS84 NAD27 NAD83  
 Directions and meeting time:  
 Will meet at the Chamberlin Parking Lot

Blacktip tail  Yes  No  
 Spotted  Yes  No  
 Eartufts  Yes  No  
 Large feet  Yes  No  
 Grey legs  Yes  No

Circle all info that applies

Type of trap?  Foot-hold  Conibear  Cage Animal still in trap?  Yes  No  
 When was trap last tended? 1200 hrs  Alive  Dead  
 Staking of Trap?  Staked  Drag Lynx appear injured?  Yes  No  
 Is animal entangled?  Yes  No Animal's Behavior  Calm  Sleeping  Pacing  
 Disturbance at the site?  Yes  No Other: \_\_\_\_\_  
 Type of Disturbance:  Vehicle traffic  Hunters  Equipment operation  Animal disturbance  
 Current weather?  Clear  Rain  Snow  Windy Current temperature? 40 degrees  
 Overnight weather?  Clear  Rain  Snow  Windy Overnight temperature? 30 degrees

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation?  Yes  No  
 Unresponsive?  Yes  No  
 Broken bones?  Yes  No If yes, Compound non-compound  
 Bleeding?  Yes  No If yes, minor Major  
 Laceration?  Yes  No If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb?  Yes  No

## 5. Information when ON-SITE: Circle all information that applies

Conibear 110 120 160 220 Other: \_\_\_\_\_  
 Foothold trap type #1.75 #2 #3 MB 450  MB 550 Other: \_\_\_\_\_  
 Inside jaw spread 4.4 inches Number of Swivels? \_\_\_\_\_  
 Jaw type Padded Laminated  Offset Number of coils: \_\_\_\_\_  
 Securing method  Staked  Drag Chain length 9 inch In-line spring?  Yes  No  
 Bait?  Yes  No Type: ground beaver Visible?  Yes  No  
 Lure?  Yes  No Type: Legal Set?  Yes  No

All people present [REDACTED] [REDACTED] Andrew Glidden  
 4 \_\_\_\_\_ 5 \_\_\_\_\_ 6 \_\_\_\_\_ 7 \_\_\_\_\_

## 6. Anesthesia (follow protocol and complete capture form)

### 7. Action Taken:

Release uninjured?  Yes Euthanized?  No Taken to veterinarian?  No  
 Name&Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_

Comments:

# Call For Service

CFS Number: **WS13-M14323**

Date: **10/23/2013**

## Call For Service

|                  |                            |                  |                                             |
|------------------|----------------------------|------------------|---------------------------------------------|
| CFS Number       | <b>WS13-M14323</b>         | Complainant      | <b>Vashon, Jen</b>                          |
| Date             | <b>10/23/2013</b>          | Address          | <b>I F &amp; W</b>                          |
| Dispatcher       |                            | City, State, Zip | <b>Bangor</b>                               |
| Call Source      |                            | Phone            |                                             |
| Received         | <b>4:30:00 PM</b>          | Call type        |                                             |
| Dispatched       | <b>4:30:00 PM</b>          | Reported Offense | <b>6780 - Endangered/Threatened Species</b> |
| Arrived          | <b>6:30:00 PM</b>          | Verified Offense | <b>6780 - Endangered/Threatened Species</b> |
| Cleared          |                            | Tow Company      |                                             |
| Location         | <b>522 Road</b>            | Vehicle          |                                             |
| City, State, Zip | <b>T9-R11 Wels</b>         | Vehicle License  |                                             |
| Jurisdiction     | <b>W12 - Section 12</b>    | Disposition      | <b>2 - Inactive</b>                         |
| Grid             | <b>11X59 - T9 R11 WELS</b> | Priority         |                                             |
| Sector           |                            | Classification   |                                             |
| Map              |                            | Agency           | <b>MWS - Maine Warden Service</b>           |
| X Coordinate     |                            | Case             | <b>WS13-M14323</b>                          |
| Y Coordinate     |                            | Reviewed On      | <b>11/1/2013 2:40:50 PM</b>                 |
| Reviewed By      | <b>10321 - Scott, Dan</b>  |                  |                                             |

### Officers

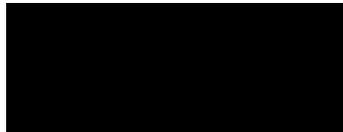
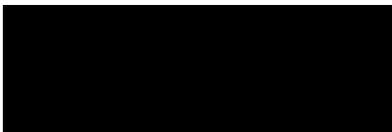
10047 - Glidden, Andrew

Notes lynx in trap off Pinkam Road. Call came in from Jen and Amanda (in Ashland).

2245, Andrew Glidden, reg hours 3.5, OT hours 4, Miles 190, I received a call from Sgt. Bill Chandler reference to a lynx caught in a trap north of Chamberlain Lake in the area of the Pinkham road. Sgt Chandler asked me to make contact with Wildlife Biologist Jen Vashon and investigate the incident. I made contact with Vashon to discuss a plan for dealing with the lynx. Vashon told me due to the fact it was going to be dark soon and the cold temperature predicted for over night she wanted me to check the lynx condition, look for any obvious injuries and if the lynx appears to be fine to release it. Vashon also gave me the names of the trappers reporting the incident, [REDACTED] (caught lynx) and told me they were staying at the Chamberlain parking lot.

After speaking with Vashon I traveled to the Chamberlain parking lot where I met [REDACTED] told me the Lynx was in a trap on the 522 road. I followed [REDACTED] to the incident location on the 522 road, when we arrived I observed the following; the Lynx was caught in a foot hold trap by the right front paw, was very calm and saw no obvious injuries. I used a notched sheet of plywood to release the lynx. Once the lynx was released from the trap it ran into the wood. I inspected the trap location and trap and found no violations, this was a legal set.

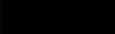
Trapper Information:



# Call For Service

CFS Number: **WS13-M14323**

Date: **10/23/2013**

Lic# 

## Lynx Incidental Capture Report

Report No. 2013-TRP005

Lynx ID: LIC33

Name of Individual Reporting Capture: [REDACTED] trapper, [REDACTED]  
[REDACTED]

Name of Biologist/Warden Responding to Report: Wdn. Corporal Andy Glidden, Biologists John DePue and Lee Kantar

Type of Capture: Trap

*Set type:* Scent post

*Trap type and size:* Foothold – #1.75 - 2 coils, plain jaw

*Jaw spread and swivels:* 4 5/8 inches, 2 swivels

*Staking:* staked, 12 inch chain

*Bait:*

*Lure:* fox urine

*Visibility of Bait:* None

*Legal Set?* Yes

Location of Capture: Solidertown Twp, Red Pine Rd.

Wildlife Management District: 10

GPS Coordinates (UTM preferred): 525436, 5070077

GPS Map Datum (NAD 83 preferred): WGS 84/NAD 83

Date of Capture: 10/24/13

Disposition of Lynx: Alive, no injuries, sedated and released on-site

Age/Sex: adult female; 25 lbs

### Description of events

**Response:** At 0854, Corp. Glidden responded to the call from a trapper that caught a lynx. Corp. Glidden called the lynx hotline to report the capture and initiate a response. MDIFW biologists John DePue and Lee Kantar and Corp. Glidden responded. The animal was sedated, examined for injuries and given supportive care (hydrating fluids, antibiotics, monitor vital signs following established procedures) before being released on-site. Corp. Glidden examined the trap and interviewed the trapper for compliance with State trapping laws. The set was legal. Biologist Jen Vashon notified USFWS Special Agent Eric Holmes.

**Weather conditions:** Overnight: 30 degrees F and windy. Daytime: 37 degrees F with clear skies.

**Disturbance:** A logging crew was chipping trees with ~100ft of the lynx. Heavy equipment, skidders, truck, and chippers all drove within 50 ft of the lynx. Observers described the lynx as being calm.

**Assessment of the lynx:** The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, torso and extremities were normal. There were no injuries on the lynx or capture foot. Body temperature was slightly below normal and was kept warm. No broken, chipped, or missing teeth. The animal was a healthy adult female and weighed 25lbs. The animal was given antibiotics and hydrating fluids. The animal was weighed and measured, ear tagged, and DNA samples were collected. The lynx was given an injection of yohimbine to reverse the effects of the sedative and observed during recovery in a portable dog crate. Upon recovery, she walked away putting full-weight on all four legs.

See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information.  
Report prepared by: Jennifer Vashon 11/4/13;

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER \*advise caller to minimize disturbance to the animal\*

Date 10/24/2013 Time 915 IFW Staff collecting caller Corporal Andrew P Glidden  
 Trapper/Individual Reporting [REDACTED]  
 Address [REDACTED] Phone number: [REDACTED]

Town: [REDACTED] **LYNX ID (w/o disturbing cat)**  
 Location Red Pine Road Soldiertown TWP (T2-R7wels) Blacktip tail  No  
 GPS coordinates 68 40 22.02 w 45 47 01.63 N Spotted  No  
 GPS datum WGS84 NAD27 NAD83 Eartufts  No  
 Directions and meeting time: Large feet  No  
 Mile 9.5 on the Roberts Road take left on to the Red Pine road approx 1.4 miles in Grey legs  No

Circle all info that applies

Type of trap?  Foot-hold  Conibear  Cage Animal still in trap?  Yes  No  
 When was trap last tended? 12 noon on 10/23  Alive  Dead  
 Staking of Trap?  Staked  Drag Lynx appear injured?  Yes  No  
 Is animal entangled?  Yes  No Animal's Behavior  Calm  Sleeping  Pacing  
 Disturbance at the site?  Yes  No Other: \_\_\_\_\_  
 Type of Disturbance:  Vehicle traffic  Hunters  Equipment operation  Animal disturbance

Current weather?  Clear  Rain  Snow  Windy Current temperature? \_\_\_\_\_ 37  
 Overnight weather?  Clear  Rain  Snow Windy Overnight temperature? \_\_\_\_\_ 30

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation?  Yes  No  
 Unresponsive?  Yes  No  
 Broken bones?  Yes  No If yes, Compound non-compound  
 Bleeding?  Yes  No If yes, minor Major  
 Laceration?  Yes  No If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb?  Yes  No

## 5. Information when ON-SITE: Circle all information that applies

Conibear 110 120 160 220 Other: \_\_\_\_\_  
 Foothold trap type  #1.75  #2  #3  MB 450  MB 550 Other: \_\_\_\_\_  
 Inside jaw spread 4 5/8 in inches Scent post Number of Swivels? 2  
 Jaw type Padded Laminated Offset Number of coils: 2  
 Securing method  Staked  Drag Chain leng 12in In-line spring? Yes  No  
 Bait?  Yes  No Type: \_\_\_\_\_ Visible? Yes  No  
 Lure?  Yes  No Type: fox urin Legal Set?  Yes  No

All people present [REDACTED] 2 Andrew P Glidden John DePue  
 Lee Kantar 5 6 7

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured?  Yes Euthanized?  Y/N Taken to veterinarian?  Y/N  
 Name&Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_

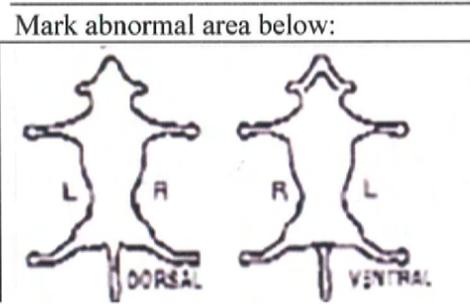
Comments:  
[REDACTED]  
[REDACTED]

DATE: 10-24-13  
 Observers: J. DePue Kantar, Ab Glidden  
 Recorder: Lee Kantar Town: Solder Town  
 Road Name: Red Pine Rd County: \_\_\_\_\_  
 UTMe 525436 UTMn 5070077 Datum: WGS84 NAD27 NAD83  
 Lynx ID# L1C33  
 Time when manageable: 1232  
 Time of recovery/ release: 1352

|                      | Ketaset<br>Concentration<br><u>100</u> mg/ml | Xylazine<br>Concentration<br><u>100</u> mg/ml | Time        | Delivery<br>Method | Additional Drug<br>(If Needed)         | Amount               |
|----------------------|----------------------------------------------|-----------------------------------------------|-------------|--------------------|----------------------------------------|----------------------|
| 1 <sup>st</sup> Dose | <u>0.90</u> ml                               | <u>0.18</u> ml                                | <u>1226</u> | <u>Syringe</u>     | <u>Antibiotic (SCorIM) 0.5cc/10lbs</u> | <u>1.25 cc</u>       |
| 2 <sup>nd</sup> Dose | ml                                           | ml                                            |             |                    | <u>Yohimbine (IVorIM) 0.5cc/20lbs</u>  | <u>0.6 cc @ 1312</u> |
| 3 <sup>rd</sup> Dose | ml                                           | ml                                            |             |                    | <u>Midazolam (IVorIM) 0.5cc/slowly</u> |                      |
| 4 <sup>th</sup> Dose | ml                                           | ml                                            |             |                    | <u>Epinephrine (SCorIM) 0.5cc/10lb</u> |                      |
| Comments:            |                                              |                                               |             |                    | <u>Doxapram (IVorSL) 1.0cc/22lbs</u>   |                      |

Sex: M  Estimated Age: Kitten Subadult  Adult Year Born (if known) \_\_\_\_\_  
 Ear Tag# (Left) 233 (Right) 233 Tag Color: Yellow

**Subjective (Body Condition):**  
 Poor  Fair  Good  Excellent   
**Objective** Normal Abnormal  
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities



| Body Temperature          | Time        |
|---------------------------|-------------|
| <u>Normal - 101-102.5</u> |             |
| <u>100.2 F</u>            | <u>1239</u> |
| <u>100.4 F</u>            | <u>1245</u> |
| <u>100.2 F</u>            | <u>1305</u> |
| F                         |             |

**Assessment:**  
Can find no injuries on capture foot or body of lynx  
**Plan:** Release/no sedation  Sedation: Treat in field  no injuries/fluids Sedate/Transport to Vet  Euthanize

**Teeth:** Normal  Missing  Broken  Worn  Describe: \_\_\_\_\_ Photo? side view (2) / front view  
**Coat Condition:** Prime  Summer  Shedding  Mange  Bare/Worn  Describe: \_\_\_\_\_  
**Capture Foot?** Left Front  Right Front  Left Rear  Right Rear   
**Capture Foot Injuries:** Yes or No  Describe: search thoroughly - no injuries visible at all

| BODY MEASUREMENTS           |                | LYNX IDENTIFICATION                |                         |                            |                                    |
|-----------------------------|----------------|------------------------------------|-------------------------|----------------------------|------------------------------------|
| Weight (Actual or Estimate) | <u>25</u> lbs  | Lynx                               |                         | Bobcat                     |                                    |
| Total Length                | <u>94</u> mm   | Tail Banding Pattern               | <u>No Bands</u>         | 1 Band                     | 2 Bands 3 Bands                    |
| Chest Girth                 | <u>39.5</u> mm | Color of tip of tail               | <u>Completely Black</u> | Black on top/white beneath |                                    |
| DNA Sample: Yes No          |                | Hind Foot Coloration               | <u>Grey</u>             | Dark Brown                 |                                    |
| Hair Blood Tissue           | Mouth Swab     | Ear Tuft Length                    | <u>&gt;1 inch</u>       | <1 inch                    |                                    |
| Parasites: Yes No           | Sample Y N     | Toe Coloration (circle white toes) | Left Front (IMMO)       | Right Front (IMMO)         | Left Rear (IMMO) Right Rear (IMMO) |

Radio Collared: Y  Initial/Previously Collared Collar Works: Y N Make: LT Sirtrack ATS GPS SAT VHF  
 Frequency: \_\_\_\_\_ Replacement Collar Freq: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months Leather Circum: \_\_\_\_\_ mm

Comments: Tropper said there was a logging crew chipping trees ~100ft from lynx. heavy equipment, skidders, trucks, chippers all drove past lynx w/in 50ft of cat. The word is the cat just laid there did not get excited & jump around. Good recovery - Dog crate

Photos? YES NO Photo Number \_\_\_\_\_ Reviewed Data Sheet? YES NO

Subcutaneous fluids - 150 - 200 ml  
 Andy Glidden will email Jen trap information form

# Call For Service

CFS Number: **WS13-022939**  
Date: **10/24/2013 8:52:24 AM**

## Call For Service

|                  |                                           |                  |                                             |
|------------------|-------------------------------------------|------------------|---------------------------------------------|
| CFS Number       | <b>WS13-022939</b>                        | Complainant      | [REDACTED]                                  |
| Date             | <b>10/24/2013 8:52:24 AM</b>              | Address          | [REDACTED]                                  |
| Dispatcher       |                                           | City, State, Zip | [REDACTED]                                  |
| Call Source      | <b>0 - Phone</b>                          | Phone            | [REDACTED]                                  |
| Received         | <b>8:54:01 AM</b>                         | Call type        |                                             |
| Dispatched       | <b>10/24/2013 8:57:17 AM</b>              | Reported Offense | <b>6780 - Endangered/Threatened Species</b> |
| Arrived          |                                           | Verified Offense | <b>6780 - Endangered/Threatened Species</b> |
| Cleared          | <b>10/24/2013 8:58:45 AM</b>              | Tow Company      |                                             |
| Location         | <b>Red Pine Rd</b>                        | Vehicle          |                                             |
| City, State, Zip | <b>Soldiertown</b>                        | Vehicle License  |                                             |
| Jurisdiction     | <b>W13 - Section 13</b>                   | Disposition      | <b>2 - Inactive</b>                         |
| Grid             | <b>10763 - Soldiertown Twp T2 R7 WELS</b> | Priority         |                                             |
| Sector           | <b>WE82</b>                               | Classification   |                                             |
| Map              |                                           | Agency           | <b>MWS - Maine Warden Service</b>           |
| X Coordinate     |                                           | Case             |                                             |
| Y Coordinate     |                                           | Reviewed On      | <b>11/1/2013 2:45:03 PM</b>                 |
| Reviewed By      | <b>10321 - Scott, Dan</b>                 |                  |                                             |

### Officers

10047 - Glidden, Andrew

Notes 2245 Andrew Glidden, 20 miles, 6 hours reg, I Received a call from RCC Houlton reference to [REDACTED] catching a lynx. I called [REDACTED] and he told me the Lynx was on the Red Pine Road and Robin Crawford's crew was chipping in the area of the lynx. I told [REDACTED] to have the crew shut down until I arrive. I contacted Wildlife Biologist John DePue and advised him of the situation. DePue told me that he would be on his way to the incident. When I arrived on the Red Pine Road I spoke to Crawford's crew and they advised me they moved the chipping operation out towards the end of the road away from where the lynx was caught. I traveled approximately 1.5 miles in past the chipping operation and met [REDACTED]. [REDACTED] showed me where the lynx was caught and I observed the following; the trap was staked down, had a short chain, the lynx was caught by the left front paw, was very calm and had no visible injuries. After Biologist DePue and Kantar arrived I showed them where the lynx was located they administered anesthesia to the lynx, collected the biological data and released the lynx unharmed. I checked the trap and set location and it was found to be a legal set, no violations

=====

CLOSED CALL FOR  
SERVICE=====

----- INCIDENT INFORMATION -----

-----CAD EVENT NUMBER: 130022939 OFFENSE CODE:-----

# Call For Service

CFS Number: **WS13-022939**  
Date: **10/24/2013 8:52:24 AM**

wsre AGENCY: wm (CAD) JURISDICTION: ws (CAD) SECTOR:  
e13 (CAD) GRID: 343 (CAD) CREATED: 20131024 08:54:01 REPORTED:  
20131024 08:52:24 OCCURRENCE START: 20131024 -1 OCCURRENCE END: -1 -1  
CLOSED: 20131024 08:58:53 CALL TAKER: rkilcoll, d, hr04  
DISPATCHER: rkilcoll, d, hr04 MODIFIED BY: rkilcoll, hr04 [RESPONSIBLE  
MEMBER] MEMBER: [10047] glidden, andrew UNIT: ws2245 GROUP ID:  
warden [ATTENDED] [LOCATION] ADDRESS: lat 45.649 lon -68.688; millinocket CITY:  
millinocket LAT/LON: 4564874,-6868751 LOCATION DETAILS: incident  
[INCIDENT DETAILS]caller advised that he has a lynx caught in his trap and there is some heavy equipment  
moving around

it.=====

SUBJECTS=====

=====

VEHICLES=====

BUSINESSES=====

=====

DISPOSITIONS=====

=====

DISPOSITION-----

[DETAILS] CODE: 6808 DISPOSITION DATE/TIME:  
20131024 08:58:57 DEVICE: hr04 PERSON ID: rkilcoll [MISCELLANEOUS]  
CREATED DATE: 0 CREATED TIME: 0 MODIFIED BY OPERATOR:  
rkilcoll MODIFIED BY WORKSTATION: hr04 LAST MODIFIED: 20131024

85851=====

=====

MESSAGES=====

=====

NCICReplies=====

=====

MESSAGE ACCEPTED - HOXWPOS4  
00004 at 10/24/2013 08:54:16 To: NCICSDBBMVWSHFSNCHRIEWAIN HOXWPOS4 NBR 4 AT 10/24/2013  
08:54:16OUT HOXWPOS4 19 AT 10/24/2013 08:54:16 MRI 26527 -----

-----MAINE STATE WARRANT DATABASE RESULTS - ON YOUR INQUIRY  
OFNAM [REDACTED] NO RECORD FOUNDIN EWA NBR 1847 AT 10/24/2013  
08:54:16OUT HOXWPOS4 19 AT 10/24/2013 08:54:16 MRI 26528 -----

-----NO NCIC WANT NAM [REDACTED] \*\*\*MESSAGE KEY QWA  
SEARCHES ALL NCIC PERSONS FILES WITHOUT LIMITATIONS.IN NCIC NBR 4408 AT 10/24/2013  
08:54:16OUT HOXWPOS4 20 AT 10/24/2013 08:54:16 MRI 26529 -----

-----MAINE STATE DATABASE RESULTS - ON YOUR INQUIRY  
OF:NAM [REDACTED] NO RECORDS FOUNDIN SDB NBR 3379 AT 10/24/2013  
08:54:16OUT HOXWPOS4 21 AT 10/24/2013 08:54:16 MRI 26530 -----

-----\*\*\*\* Maine State Database Results - CONDITION OF RELEASE \*\*\*\* NO BAIL CONDITION  
RECORD FOUNDNAM [REDACTED]  
HOXWPOS4 22 AT 10/24/2013 08:54:16 MRI 26531 -----  
----- MAINE MOTOR VEHICLE DRIVER RESPONSENAM [REDACTED]  
[REDACTED]

# Call For Service

CFS Number: **WS13-022939**

Date: **10/24/2013 8:52:24 AM**

OLS/MEISSUED: 2010-01-22 EXPIRES: 2017-03-14CLASS: C (NON-CDL)DRIVER STATUS: VALID  
CREDENTIAL STATUS: VALID COMMERCIAL CLASS: CDL DRIVER STATUS: VALID COMMERCIAL  
CREDENTIAL STATUS: PREVIOUS NAME: [REDACTED]

[REDACTED] TOTALS: CONVICTIONS: 2 WITHDRAWALS: 0 INCIDENTS: 1\*\*\*MOST RECENT  
11 YEAR HISTORY SHOWN BELOW - USE "DQHA" FOR COMPLETE HISTORY\*\*\* DRIVER  
HISTORY CONVICTIONS =====DATE OF CONVICTION: 2005-08-  
03 DATE OF CITATION: 2005-07-23 OFFENSE: ALLOWING ILLEGAL OPERATION OF A MOTOR  
VEH HAZMAT: NODESC: D-VB (DOCKET:001764846) REF ID: ALL ILLEG OP MV\*\*\*THIS  
INFORMATION IS PROVIDED FOR LAW ENFORCEMENT PURPOSES ONLY\*\*\*IN BMVWS NBR 5445 AT  
10/24/2013 08:54:17OUT HOXWPOS4 23 AT 10/24/2013 08:54:17 MRI 26532

=====

ACTIVITY

LISTS=====

INCIDENT

ASSOCIATIONS=====

**Lynx Incidental Capture Report**

**Report No. 2012-TRP005**

**Lynx ID: LIC25**

**Name of Individual Reporting Capture:** [REDACTED]

**Name of Biologist/Warden Responding to Report:** Wdn John Lonergan, Biologists  
Scott McLellan and John DePue

**Type of Capture:** Trap

*Set type:* Dirthole

*Trap type and size:* MB550 offset, laminated

*Jaw spread and swivels:* 4 ½" and 5 swivels

*Staking:* Staked, 12 inch chain

*Bait:* Yes, mice and fish liquid

*Lure:* Yes

*Visibility of Bait:* No, dirthole set

*Legal Set?* Yes

**Location of Capture:** T1 R13 WELS

**Wildlife Management District:** 9

**GPS Coordinates (UTM preferred):** 474396, 5060312

**GPS Map Datum (NAD 83 preferred):** Nad83

**Date of Capture:** 10/26/12

**Disposition of Lynx:** Alive, sedated, and released on site

**Age/Sex:** male 22 lbs

**Description of events**

**Response:** At 852 on 10/26/2012, John DePue received a call on the lynx hotline from a trapper reporting the capture of a lynx in T1 R13Wels. The trapper was concerned about bird hunters in the area. Wdn. John Lonergan and biologists Scott McLellan and John DePue responded. USFWS Special Agent Eric Holmes was notified of the capture. Wdn. Lonergan checked the set and interviewed the trapper and determined that the trap was legal. The lynx was sedated, examined for injuries, provided supportive care and released from the trap onsite.

**Weather conditions:** Daytime temperatures was 50 degrees F with clear skies and rising temperatures ~65 degrees F at time of handling. Overnight temperatures was high 30s.

**Disturbance:** No vehicle traffic in the area when staff was on-site, but the trapper was concerned about bird hunters in the area.

**Assessment of the lynx:** The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, torso, were normal and extremities abnormal (a small laceration on two toes of capture foot). Laceration was irrigated with saline, and applied a spray adhesive bandage. Body temperature was initially high and animal was cooled. The animal was a healthy male and

weighed 22lbs. The animal was given antibiotics and fluids subcutaneously as supportive care. Body measurements and DNA were collected and the animal was marked with yellow eartags in each ear. The lynx was given reversal drugs and observed during recovery. The cat got up and took off fast with good physical coordination; a smooth recovery.

Note: The initial call indicate the cat was caught in Shawtown (see call to service), but it was actually T1R13 WELS.

See attached check list for reporting lynx captures and WS Incident Card for more information.

Report prepared & updated by: Jennifer Vashon 10/30/2012 and 11/1/12  
Report reviewed by: John DePue and Scott McLellan (10/31/12)

# Call For Service

CFS Number: **WS12-M08291**

Date: **10/26/2012**

## Call For Service

---

|                  |                             |                  |                                             |
|------------------|-----------------------------|------------------|---------------------------------------------|
| CFS Number       | <b>WS12-M08291</b>          | Complainant      | <b>Bates, Lisa</b>                          |
| Date             | <b>10/26/2012</b>           | Address          | <b>Shawtown Twp</b>                         |
| Dispatcher       |                             | City, State, Zip | <b>Shawtown Twp</b>                         |
| Call Source      |                             | Phone            |                                             |
| Received         | <b>9:00:00 AM</b>           | Call type        |                                             |
| Dispatched       | <b>9:00:00 AM</b>           | Reported Offense | <b>6780 - Endangered/Threatened Species</b> |
| Arrived          | <b>10:00:00 AM</b>          | Verified Offense | <b>6780 - Endangered/Threatened Species</b> |
| Cleared          | <b>1:00:00 PM</b>           | Tow Company      |                                             |
| Location         | <b>Shawtown Twp</b>         | Vehicle          |                                             |
| City, State, Zip | <b>Shawtown Twp</b>         | Vehicle License  |                                             |
| Jurisdiction     | <b>W11 - Section 11</b>     | Disposition      | <b>3 - Pending Approval</b>                 |
| Grid             | <b>11749 - Shawtown Twp</b> | Priority         |                                             |
| Sector           |                             | Classification   |                                             |
| Map              |                             | Agency           | <b>MWS - Maine Warden Service</b>           |
| X Coordinate     |                             | Case             | <b>WS12-M08291</b>                          |
| Y Coordinate     |                             | Reviewed On      |                                             |
| Reviewed By      |                             |                  |                                             |

### Officers

11604 - Lonergan, John

Notes

Lonergan enroute at 9:15  
Bio's left at 11:20

2233 Wdn Lonergan 50 miles, 4 reg hours, dispatched @ 0900hrs on scene @ 1000hrs( did respond with blue lights activated to trap location to prevent any injuries to animal) Met with trapper- took trapper information, located exact location of the lynx- reported location to responding IF&W Biologists, flagged end of rd, waited at scene with lynx just in sight, biologists on scene @ 1200 hrs, when lynx was removed from trap set location I investigated the set( see report) clear @ 1300 hrs

# Maine Warden Service Investigation Report

Case No. **WS12-M08291**  
Report No. **WS12-M08291.1**  
Report Date: **10/26/2012**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

**1**

Page 1 of 2

Subject: **6780 - Endangered/Threatened Species**

Case Report Status **S - Submitted**  
Occurred On (and Between) **10/26/2012 9:00:00 AM**  
Location of Incident **Shawtown Twp**  
Grid **11749 - Shawtown Twp**

Date Entered **10/28/2012 12:40:15 PM**  
Entered By **11604 - Lonergan, John**  
Date Verified  
Verified By  
Date Approved  
Approved By  
Connecting Cases  
Disposition **Not a Crime/Other Service**  
Clearance Reason  
Date of Clearance  
Reporting Agency **Maine Warden Service**  
Division **MWS - Section 12**  
Notified  
Geo Code **11749 - SHAWTOWN TWP**  
Local Geo Code **T1,R13**

Reporting Officer  
**11604 - Lonergan, John**

Call Source **Cellular**  
Vehicle Activity  
Vehicle Traveling  
@ Cross Street

Date/Time Submitted  
**10/28/2012 4:47:10 PM**  
Assisted By

Entry Method  
Entry Point  
Suspect Vehicle  
Color  
Report Narrative

Suspect Actions(MO)  
Entry Direction  
Suspect Vehicle Body  
Style

2233 4 regular hours, 50 miles

On October 26, 2012 at 0900 hrs I was dispatched to the report of a lynx caught in a foothold trap. I made phone contact with the trapper, [REDACTED] a subject I am familiar with, and responded to the location he provided. I responded with blue lights activated to prevent any injuries to the trapped animal. I was on scene at 10:00 hrs and met with the trapper and [REDACTED]. I took the subjects information and then followed the subjects to a point where I could observe the lynx from a distance on a dead end dirt Rd. The lynx appeared to be sleeping for the majority of the time I observed it, however when I first arrived on scene, it was pacing.

The 2 IF&W Wildlife Biologists arrived on scene at 12:00 hrs, they began making preparations to tranquilize the lynx and set up an area to perform their examination in the shade. I assisted them by getting a 5 gallon pail of cool water from a nearby brook.

After the biologists had darted and removed the lynx, I closely examined the trap site and the trap for compliance with Maine trapping laws. I took several photographs.

The trap was a MB550 foothold trap, I used a tape measure on the inside jaw spread at the dog and measured a little over 4.5 inches-well under the maximum allowed of 5&3/8". I observed no exposed bait, no feathers or other attractors, the chain on the trap measured 12" and had 5 in line swivels on the chain. The trap had been staked in place with a rod. The chain was attached to the trap at the center of the frame. The trap was laminated and offset with a visible gap between the jaws when sprung. Type of set was dirt hole and the bait used was a homemade rendered down mixture of mice and trout guts and heads to a liquid consistency.

Clear of scene @ 1300 hrs.

LOCATION: GPS -WGS84 N45'41.7516  
W069'19.7325  
Dirt Rd North of Second Roach Pond

## Offense Detail: 6892 - Trapping - Other

Offense Description **6892 - Trapping - Other**  
IBR Code  
IBR Group  
Crime Against  
Using  
Criminal Activity

Location **10 - Field/Woods**  
Offense Completed? **Yes**  
Hate/Bias **None (No Bias)**  
Domestic Violence **No**  
Weapons/Force

No. Prem. Entered  
Entry Method  
Type Security  
Tools Used

# Maine Warden Service Investigation Report

Case No. **WS12-M08291**  
Report No. **WS12-M08291.1**  
Report Date: **10/26/2012**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

# 2

Page 2 of 2

## Other Entity: O1 -- [REDACTED]

Entity Code **O1**  
Entity Type **Complainant**

|              |            |             |            |                  |                                       |
|--------------|------------|-------------|------------|------------------|---------------------------------------|
| Name         | [REDACTED] | DOB         | [REDACTED] | Place of Birth   |                                       |
| AKA          | [REDACTED] | Age         | [REDACTED] | SSN              |                                       |
| Alert(s)     |            | Sex         | [REDACTED] | DLN              | [REDACTED]                            |
| Address      | [REDACTED] | Race        | [REDACTED] | DLN State        | <b>ME - Maine</b>                     |
| CSZ          | [REDACTED] | Ethnicity   | [REDACTED] | DLN Country      | <b>USA - United States of America</b> |
| Home Phone   | [REDACTED] | Ht.         | [REDACTED] | Occupation/Grade |                                       |
| Work Phone   | [REDACTED] | Wt.         | [REDACTED] | Employer/School  |                                       |
| Attire       |            | Eye Color   | [REDACTED] | Res. Country     | [REDACTED]                            |
|              |            | Hair Color  | [REDACTED] | Res. Country     | <b>United States of America</b>       |
|              |            | Facial Hair | [REDACTED] | Resident Status  | <b>R - Resident</b>                   |
|              |            | Skin        | [REDACTED] |                  |                                       |
| Entity Notes | [REDACTED] |             |            |                  |                                       |

# Check List for reporting and responding to an incidental capture of a lynx

## 1. Obtain information from CALLER

Date 10/26/2012 Time 9:00 IFW Staff collecting caller info: Wdn John Lonergan

Trapper/Individual Reporting [REDACTED]

Address [REDACTED] Phone number: [REDACTED]

Circle all info that applies

Type of trap? Foot-hold When was trap last tended? noon on 10/25

Animal still in trap? Yes Is animal entangled? No

Animal's Behavior Pacing Lynx injured? Yes No

Disturbance at the site? No Other: \_\_\_\_\_  
 Vehicle traffic Human disturbance Equipment operation Animal disturbance

\*advise caller to minimize disturbance to the animal \*

Current weather? Clear Current temperature? 50' rising

Overnight weather? Clear Overnight temperature? 30

Directions and meeting time:

call and get directions- Shawtown Rd North of 2nd Roach Pond-logging rd to the North

## 2. Contact IFW lynx hotline 592-4734 to inform lynx specialist/ Mammal Group

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. Information when ON-SITE: Circle all information that applies

Size of trap MB 550

Inside jaw spread 4.5 inches Number of Swivels? 5

Jaw type Laminated Offset Legal Set? Yes All people present

Securing method Staked Drag Visible? No? [REDACTED]

Bait? Yes Lure? Type: mice and fish liq 3 Scott Mcullum-IFW

Town: T1,R13 WELS 4 John DePue-IFW

Location north of second Roach Pond 5

GPS coordinates N45'42.7516 W069'19.7325 6

GPS datum WGS84 7

## 5. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation? Yes No

Unresponsive? Yes No

Broken bones? Yes No If yes, Compound non-compound

Bleeding? Yes No If yes, minor Major

Laceration? Yes No If yes, superficial (through 1st layer of skin) major (deep requires sutures)

Limping/dragging limb? Yes No

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured? Y/N Euthanized? Y/N Taken to rehab. Center? Y/N

Name&Location of Rehab Center \_\_\_\_\_ Phone # \_\_\_\_\_

Comments:

DATE: 10/26/12 **Incidental Lynx Capture Form** Lynx ID# L1C25  
 Observers: Depe, McHelen  
 Recorder: Depe Town: T1 R13 Time when manageable: 1242  
 Road Name: \_\_\_\_\_ County: Piscot Time of recovery/ release: 1442  
 UTMe 474396 UTMn 5060312 Datum: WGS84 NAD27 NAD83

| Drug Used:           | Ketaset Concentration: | Xylazine Concentration: | 5:1 Ket/Xyl Concentration: | Time        | Delivery Method | Additional Drug (If Needed)     | Amount        |
|----------------------|------------------------|-------------------------|----------------------------|-------------|-----------------|---------------------------------|---------------|
|                      | <u>100 mg/ml</u>       | <u>100 mg/ml</u>        | <u>100 mg/ml</u>           |             |                 |                                 | <u>1.0 ml</u> |
| 1 <sup>st</sup> Dose | <u>100</u> m l         | <u>100</u> m l          | <u>1.15</u> m l            | <u>1233</u> | <u>Subcut</u>   | Antibiotic (SCorIM) 0.5cc/10lbs | <u>1.0 ml</u> |
| 2 <sup>nd</sup> Dose | m l                    | m l                     | m l                        |             |                 | Yohimbine (IVorIM) 0.5cc/20lbs  | <u>.55 ml</u> |
| 3 <sup>rd</sup> Dose | m l                    | m l                     | m l                        |             |                 | Midazolam (IVorIM) 0.5cc/slowly |               |
| 4 <sup>th</sup> Dose | m l                    | m l                     | m l                        |             |                 | Epinephrine (SCorIM) 0.5cc/10lb |               |
| Comments:            |                        |                         |                            |             |                 | Doxapram (IVorSL) 1.0cc/22lbs   |               |

Ear Tag#(Left) 219 (Right) 219 Tag Color: Yellow Green Red Other: \_\_\_\_\_  
 Radio Collared: Y  Initial/Previously Collared Collar Works: Y N Make: LT Sirtrack ATS GPS SAT VHF  
 Radio Collar Frequency: \_\_\_\_\_ Replacement Collar Freq.: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months  
 Leather Circumference: \_\_\_\_\_ mm

**PHYSICAL INFORMATION**  
 Sex: M F Year Born(if known) \_\_\_\_\_  
 Estimated Age: Kitten Subadult Adult  
 Teeth: Normal  Missing  Broken  Worn   
 Describe: \_\_\_\_\_  
 Location of Teeth? side view (2) \_\_\_\_\_ front view \_\_\_\_\_  
 Coat Condition: Prime  Summer   
 Shedding  Mange  Bare/Worn \_\_\_\_\_  
 Capture Foot? Front: L, R or Hind: L, R  
 Capture Foot Injuries? Y N  
 Describe: 1 small laceration across 5<sup>th</sup> toe.

**Subjective Body Condition:**  
 Poor  Fair  Good  Excellent   
**Objective** Normal Abnormal  
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities    
 Assessment: 2 small cuts on middle knuckles of capture foot. Cleaned cuts and sprayed. Cat was down for 2 hours - but got up + had great coordination  
 Plan: Release/no sedation, Euthanize  
 Sedation: Treat in field, or Transport to Vet;  
120ml saline iusc - back

Mark abnormal area below:

**Normal - 101-102.5**

| Body Temp      | Time        |
|----------------|-------------|
| <u>105.9</u> F | <u>1249</u> |
| <u>103.3</u> F | <u>1253</u> |
| <u>101.4</u> F | <u>1318</u> |
| <u>99.8</u> F  | <u>1337</u> |

**BODY MEASUREMENTS**

|                             |               |
|-----------------------------|---------------|
| Weight (Actual or Estimate) | <u>22</u> lbs |
| Neck Circumference          | <u>230</u> mm |
| Chest Girth                 | <u>375</u> mm |
| Shoulder Height             | <u>500</u> mm |
| Tail Length (tip of bone)   | <u>133</u> mm |
| Tail Length (tip of tail)   | <u>126</u> mm |
| Total Length                | <u>890</u> mm |
| Zygomatic Arch              | mm            |
| Ear Tuft Length             | <u>62</u> mm  |

| Tail Banding Pattern | No Bands                            | 1 Band | 2 Bands                    | 3 Bands |
|----------------------|-------------------------------------|--------|----------------------------|---------|
| Color of tip of tail | Completely Black                    |        | Black on top/white beneath |         |
| Hind Foot Coloration | Dark Brown <u>Grey</u> Other: _____ |        |                            |         |
| Toe Coloration       | Inside                              | Middle | Middle                     | Outside |
| Left Front           | <u>BROWN</u>                        |        |                            |         |
| Right Front          |                                     |        |                            |         |
| Left Rear            |                                     |        |                            |         |
| Right Rear           |                                     |        |                            |         |

Scars: Y  Description: 1400mm stretch  
 DNA: Hair Sample Y N Tissue Sample Y N Blood Sample Y N  
 Parasites: Y N Sample: Y N Rare Light Common  
 Photos? YES NO Photo Number \_\_\_\_\_  
 Reviewed Data Sheet? YES NO

Comments: cat was jumpy in trap. handling went well. cat was down for 2 hours then got up + took off fast w/ good physical coordination.

**FORM FOR REPORTING & RESPONDING TO INCIDENTAL CAPTURES OF LYNX**

*1.76 + wpt to 10.  
b.g*

**1. Obtain information from CALLER**

Date 6/26/12 Time 852 IFW Staff collecting caller info: John Deere  
 Trapper/Individual Reporting [redacted]  
 Address [redacted] Phone number: [redacted]

Circle all info that applies

Type of trap?  Foot-hold  Conibear  
 Animal still in trap? *hind*  Yes  No  
 Animal's Behavior  Calm  Sleeping  Pacing *agitated when approached*

When was trap last tended? \_\_\_\_\_  
 Is animal entangled? Yes  No   
 Lynx injured? Yes  No

Disturbance at the site? Yes  No  Other: \_\_\_\_\_  
 Vehicle traffic  Human disturbance  Equipment operation  Animal disturbance

\*advise caller to minimize disturbance to the animal\*

Current weather?  Clear  Rain  Snow  Windy  
 Overnight weather?  Clear  Rain  Snow  Windy

Current temperature? \_\_\_\_\_  
 Overnight temperature? \_\_\_\_\_

Directions and meeting time: \_\_\_\_\_

*staked  
offset  
on road  
side*

**2. Contact IFW lynx hotline 592-4734 to inform lynx specialist/ Mammal Group**

**3. At the site minimize disturbance (crowd and/or traffic control)**

**4. Information when ON-SITE** Circle all information that applies

Size of trap *1355* #1.75  #2  #3  110  120  160  220  Other: \_\_\_\_\_  
 Inside jaw spread 415 inches  
 Jaw type  Padded  Laminated  Offset  
 Securing method  Staked  Drag  
 Bait?  Yes  No Visible? Yes  No   
 Lure?  Yes  No Type: \_\_\_\_\_  
 Town: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 GPS coordinates \_\_\_\_\_ E \_\_\_\_\_ N  
 GPS datum WGS84 NAD27 NAD83

Number of Swivels? 2  
 All people present  
 1 \_\_\_\_\_  
 2 \_\_\_\_\_  
 3 \_\_\_\_\_  
 4 \_\_\_\_\_  
 5 \_\_\_\_\_  
 6 \_\_\_\_\_  
 7 \_\_\_\_\_

**5. At the site. Assess the ANIMAL prior to chemical immobilization**

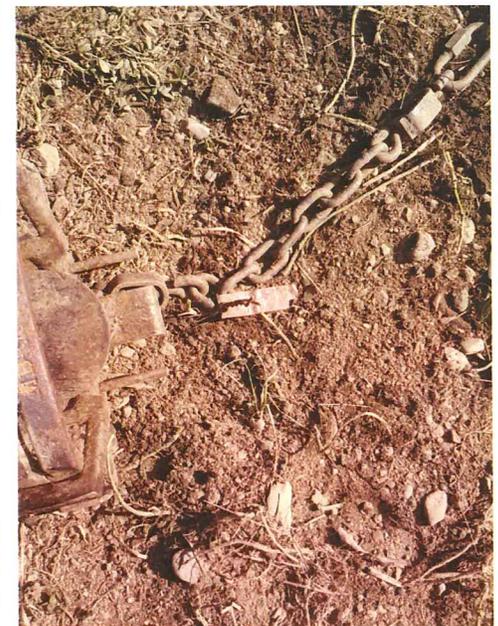
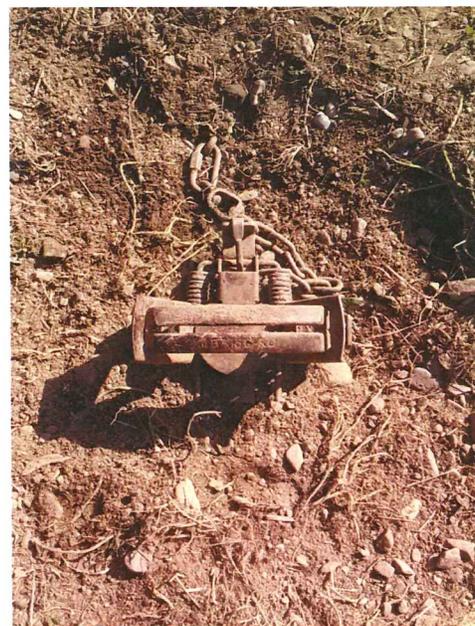
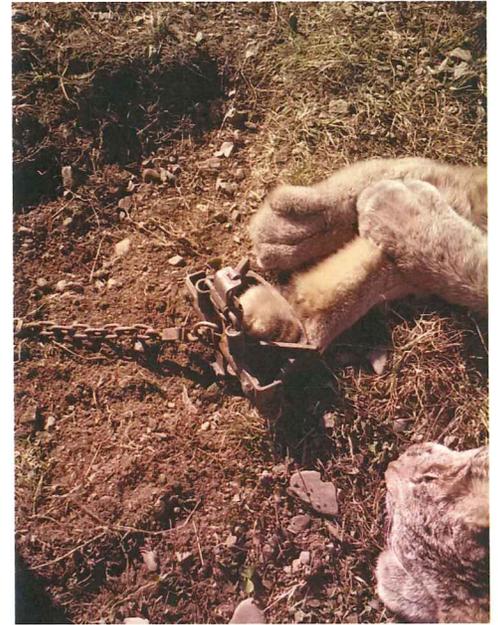
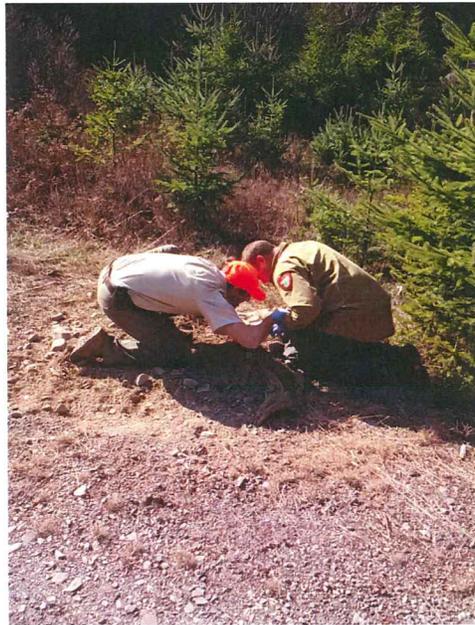
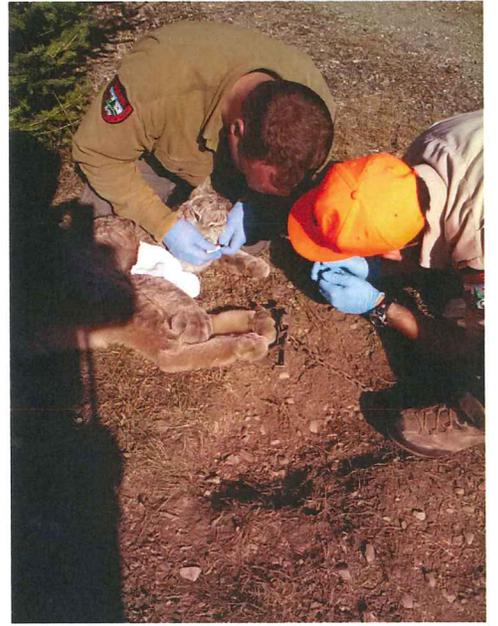
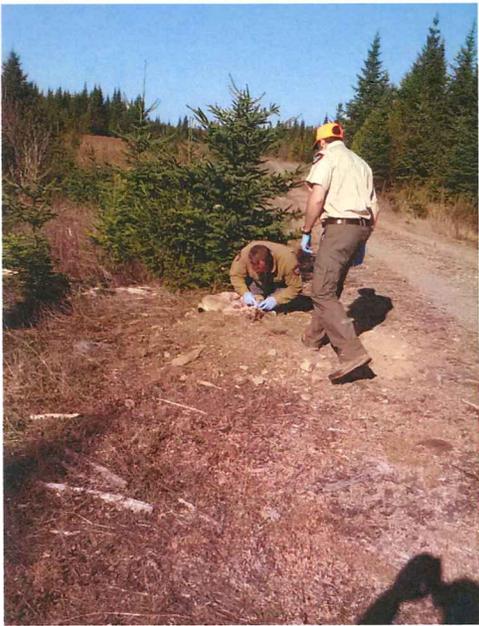
Animal entangled in vegetation? Yes  No   
 Unresponsive? Yes  No   
 Broken bones? Yes  No  If yes, Compound non-compound  
 Bleeding? Yes  No  If yes, minor Major  
 Laceration? Yes  No  If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes  No

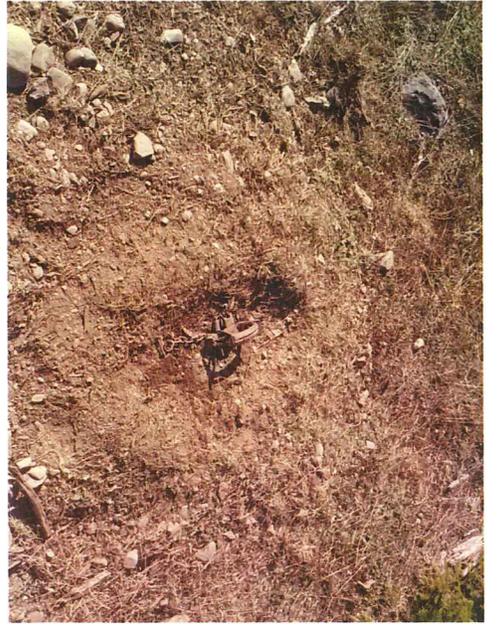
**6. Anesthesia (follow protocol and complete capture form)**

**7. Action Taken:**

Release uninjured?  Y/N Euthanized?  Y/N Taken to rehab. Center?  Y/N  
 Name&Location of Rehab Center \_\_\_\_\_ Phone # \_\_\_\_\_

Comments: *handling went well cat took off fast + with good coordination after 2 hrs recovery.*





## Lynx Incidental Capture Report

Report No. 2013-TRP002

Lynx ID: LIC31

Name of Individual Reporting Capture: [REDACTED]

[REDACTED] trapper-(Predator Management Program)

Name of Biologist/Warden Responding to Report: District Warden John Lonergan, Biologists Scott McLellan and Doug Kane

Type of Capture: Trap

*Set type:*

*Trap type and size:* Foothold – KB 5.5 - 4 coils, laminated/offset jaw

*Jaw spread and swivels:* 5 ¼ inches, 2 swivels

*Staking:* staked, 8 inch chain

*Bait:* store bought sausage

*Lure:* O'Gorham's coyote gland lure

*Visibility of Bait:* None

*Legal Set?* Yes

Location of Capture: Beaver Cover, Tussle Lagoon Rd.

Wildlife Management District: 9

GPS Coordinates (UTM preferred): 463259, 5045786

GPS Map Datum (NAD 83 preferred): NAD 83

Date of Capture: 10/22/13

Disposition of Lynx: Alive, small laceration, sedated, treated, and released on-site

Age/Sex: Subadult female; 18 lbs

### Description of events

**Response:** At 0900, Warden John Lonergan responded to the call from a trapper that caught a lynx. Greenville Headquarters called the lynx hotline to report the capture and initiate a response. Biologist Jen Vashon notified USFWS Special Agent Eric Holmes. MDIFW biologists Scott McLellan and Doug Kane and Wdn. Lonergan responded. The animal was sedated, examined for injuries and given supportive care (hydrating fluids, antibiotics, monitor vital signs, and small injury was treated following established procedures) before being released on-site. Wdn. Lonegran examined the trap and interviewed the trapper for compliance with State trapping laws. The set was legal.

**Weather conditions:** Overnight: 38 degrees F with clear skies. Daytime: 45 degrees F with clear skies-windy, started to rain during lynx handling.

**Disturbance:** None reported or observed at site

**Assessment of the lynx:** The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, and torso were normal. Extremities: A laceration, so small that it was difficult to find, was observed dorsally on the right front capture foot. Body temperature was normal. No broken, chipped, or missing teeth. The animal was a healthy suadult female and weighed 17.6lbs. The animal was given antibiotics, hydrating fluids, and a small wound on the capture foot was treated. The animal was weighed and measured, ear tagged, and DNA samples were collected. The lynx was given an injection of yohimbine to reverse the effects of the sedative and observed during recovery in a portable dog crate. Upon recovery, she walked away (some stumbling from effects of sedative) putting full-weight on all four legs.

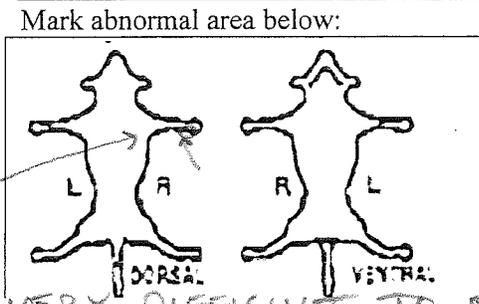
See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information.  
Report prepared by: Jennifer Vashon 11/1/13;

DATE: 10/22/13 **Incidental Lynx Capture Form** **Lynx ID#** L1C31  
 Observers: DK, SRM, J. LONGERGAN  
 Recorder: MCLELLAN Town: BEAVER COVE  
 Road Name: TUSSE LAGOON RD County: PISCATAQUIS  
 UTMe 463259 UTMn 5045786 Datum: WGS84 NAD27 NAD83  
 Time when manageable: 1104h  
 Time of recovery/release: 1308h

|                      | Ketaset Concentration | Xylazine Concentration | Time  | Delivery Method | Additional Drug (If Needed)     | Amount   |
|----------------------|-----------------------|------------------------|-------|-----------------|---------------------------------|----------|
| 1 <sup>st</sup> Dose | 100mg/ml              | 100 mg/ml              | 1054h | SYRINGE P.O.    | Antibiotic (SCorIM) 0.5cc/10lbs | 0.90cc   |
| 2 <sup>nd</sup> Dose |                       |                        |       |                 | Yohimbine (IVorIM) 0.5cc/20lbs  | 0.40cc @ |
| 3 <sup>rd</sup> Dose |                       |                        |       |                 | Midazolam (IVorIM) 0.5cc/slowly | 1225h    |
| 4 <sup>th</sup> Dose |                       |                        |       |                 | Epinephrine (SCorIM) 0.5cc/10lb |          |
| Comments:            |                       |                        |       |                 | Doxapram (IVorSL) 1.0cc/22lbs   |          |

Sex: M F Estimated Age: Kitten Subadult Adult Year Born (if known) 2012 EST  
 Ear Tag# (Left) 139 (Right) 139 Tag Color: YELLOW

**Subjective (Body Condition):**  
 Poor  Fair  Good  Excellent   
**Objective** Normal Abnormal  
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities



| Body Temperature   | Time  |
|--------------------|-------|
| Normal - 101-102.5 |       |
| 101.2 F            | 1113h |
| 100.4 F            | 1120h |
| 99.6 F             | 1200h |
| 100.3 F            | 1217h |

**Assesment:** TINY LACERATION VERY DIFFICULT TO EVEN SEE - HAD TO PART HAIR TO EVEN FIND - ~ SIZE OF PIN HEAD; HIGH CAPTURE  
**Plan:** Release/no sedation Sedation: Treat in field IRRIGATE, ANTIBIOTICS + FLUIDS Sedate/Transport to Vet Euthanize ON SIDE

**Teeth:** Normal Missing Broken Worn Describe: \_\_\_\_\_ Photo? side view (2) / front view  
**Coat Condition:** Prime Summer Shedding Mange Bare/Worn Describe: BETWEEN SUMMER + PRIME, BUT CLOSER TO PRIME  
**Capture Foot?** Left Front Right Front Left Rear Right Rear  
**Capture Foot Injuries:** Yes or No Describe: SEE ASSESSMENT

| BODY MEASUREMENTS                                                                                                                                                         |               | LYNX IDENTIFICATION                |                         |                            |                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------|-------------------------|----------------------------|-----------------------|
| Weight (Actual or Estimate)                                                                                                                                               | <u>18 lbs</u> | <b>Lynx</b>                        |                         | <b>Bobcat</b>              |                       |
| Total Length                                                                                                                                                              | mm            | Tail Banding Pattern               | <u>No Bands</u>         | 1 Band                     | 2 Bands 3 Bands       |
| Chest Girth                                                                                                                                                               | mm            | Color of tip of tail               | <u>Completely Black</u> | Black on top/white beneath |                       |
| DNA Sample: Yes No                                                                                                                                                        |               | Hind Foot Coloration               | <u>Grey</u>             | Dark Brown                 |                       |
| Hair Blood Tissue                                                                                                                                                         | Mouth Swab    | Ear Tuft Length                    | <u>&gt;1 inch</u>       | <1 inch                    |                       |
| Parasites: Yes No                                                                                                                                                         |               | Toe Coloration (circle white toes) | <u>NONE WHITE</u>       | Left Front (I M M O)       | Right Front (I M M O) |
| Sparse Abundant                                                                                                                                                           | Sample Y N    |                                    |                         | Left Rear (I M M O)        | Right Rear (I M M O)  |
| <b>Radio Collared:</b> <u>Y</u> <u>N</u> Initial/Previously Collared Collar Works: <u>Y</u> <u>N</u> Make: <u>LT Sirtrack</u> <u>ATS</u> <u>GPS</u> <u>SAT</u> <u>VHF</u> |               |                                    |                         |                            |                       |
| Frequency: _____ Replacement Collar Freq: _____ Collar Life: _____ months Leather Circum: _____ mm                                                                        |               |                                    |                         |                            |                       |

Comments: RECOVERED IN KENNEL + WALKED OFF GREAT (BESIDES NORMAL STUMBLING) -> WATCHED HER FOR ABOUT 15 MINUTES, + SHE IMPROVED THE WHOLE TIME

Photos? YES NO Photo Number LONGERGAN CAMERA Reviewed Data Sheet? YES NO  
 ADD. COMMENTS: "SLIGHT TEAR (3/16") IN EAR THAT HAS LONG RECOVERED - NOT RELATED TO TRAP INCIDENT 10/22/13 1735h

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER \*advise caller to minimize disturbance to the animal \*

Date 10/22/13 Time 0900 IFW Staff collecting caller info: WYN. JOHN LOWERCAN  
 Trapper/Individual Reporting \_\_\_\_\_  
 Address \_\_\_\_\_ Phone number: \_\_\_\_\_  
 Town: \_\_\_\_\_ LYNX ID (w/o disturbing cat)  
 Location: \_\_\_\_\_ Blacktip tail Yes No  
 GPS coordinates N 45° 33.8992 E W 069.28.2562 Spotted  Yes No  
 GPS datum WGS83 NAD27 NAD83 Eartufts  Yes No  
 Directions and meeting time: \_\_\_\_\_ Large feet Yes No  
 Grey legs Yes No

ASAP - 2 miles E of Lily Rd on Tussock Lagoon Road BEAVER CREEK ME

Circle all info that applies  
 Type of trap?  Foot-hold  Conibear Cage Animal still in trap?  Yes  No  
 When was trap last tended? 10/21/13 0900 HRS  Alive  Dead  
 Staking of Trap?  Staked  Drag Lynx appear injured?  Yes  No  
 Is animal entangled? Yes  No  Animal's Behavior  Calm  Sleeping  Pacing

Disturbance at the site? Yes  No  Other: \_\_\_\_\_  
 Type of Disturbance: Vehicle traffic  Hunters  Equipment operation  Animal disturbance

Current weather?  Clear  Rain  Snow  Windy  Current temperature? 45°  
 Overnight weather?  Clear  Rain  Snow  Windy  Overnight temperature? 38°

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation? Yes  No   
 Unresponsive? Yes  No   
 Broken bones? Yes  No  If yes, Compound non-compound  
 Bleeding?  Yes  No If yes,  minor Major  
 Laceration?  Yes  No If yes,  superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes  No

## 5. Information when ON-SITE: Circle all information that applies

Conibear 110 120 160 220 Other: \_\_\_\_\_  
 Foot-hold trap type #1.75 #2 #3 MB 450 MB 550 Other: K.B. 5.5  
 Inside jaw spread 5 1/4 inches Number of Swivels? 2  
 Jaw type Padded  Laminated  Offset Number of coils: 4  
 Securing method  Staked  Drag Chain length: 8" In-line spring? Yes  No   
 Bait?  Yes  No Type: STORE BOUGHT SAUSAGE Visible? Yes  No   
 Lure?  Yes  No Type: 06 GRORMANS CUYOTE GLAND LURE Legal Set?  Yes  No  
 All people present 1 \_\_\_\_\_ 3 WYN LOWERCAN  
 4 WILDLIFE BIO DOUG KANE 5 BIO SCOTT MCKELLEN 6 \_\_\_\_\_ 7 \_\_\_\_\_

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured?  Y/N Euthanized? Y/N Taken to veterinarian? Y/N  
 Name & Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_

Comments: \_\_\_\_\_

# Maine Warden Service Investigation Report

Case No. **WS13-M14266**

Report No. **WS13-M14266.1**

Report Date: **10/22/2013**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

**1**

Page 1 of 3

Subject: **6780 - Endangered/Threatened Species**

|                              |                              |
|------------------------------|------------------------------|
| Case Report Status           | <b>I - In Process</b>        |
| Occurred On<br>(and Between) | <b>10/22/2013 9:00:00 AM</b> |
| Location of Incident         | <b>Beaver Cv</b>             |
| Grid                         | <b>11532 - Beaver Cove</b>   |
| Call Source                  | <b>Phone</b>                 |

Date Entered **10/22/2013 3:53:40 PM**  
Entered By **11604 - Lonergan, John**

Reporting Officer  
**11604 - Lonergan, John**

Date Verified  
Verified By  
Date Approved  
Approved By  
Connecting Cases  
Disposition **Not a Crime/Other Service**

Clearance Reason  
Date of Clearance  
Reporting Agency **Maine Warden Service**  
Division **MWS - Section 12**  
Notified

Date/Time Submitted

Assisted By

Vehicle Activity  
Vehicle Traveling  
@ Cross Street

Geo Code **11532 - BEAVER COVE PLT**

Local Geo Code

Entry Method  
Entry Point  
Suspect Vehicle  
Color  
Report Narrative

Suspect Actions(MO)  
Entry Direction  
Suspect Vehicle Body  
Style

On October 22, 2013 at 0900 hours I was dispatched to the report of a lynx having been caught in a trap on the Tussle Lagoon Rd in Beaver Cove. The report was called in by the trapper as required under Maine law.

I arrived on scene at 0930 hours. I used binoculars to positively ID the cat as a Lynx and contacted the responding IF&W Wildlife Biologists to confirm the report and give precise location information.

I took information from the trappers lifetime trappers license and identified him using the photograph on his State of Maine drivers license. I interviewed him about the type of trap he was using, the type of set, lure and bait being used. I recorded his motor vehicle registration and allowed him to leave the scene to tend to the rest of his trap line. I blocked the road with my patrol truck to prevent any motor vehicle traffic from driving near the cat.

The Wildlife Biologists arrived on scene at approximately 1000 hours. They observed the cat, made their preparations for testing procedures and set up their chemical immobilization procedure. The biologists evaluated the cat and performed their procedures. I examined the right front paw and there was a line from the trap jaw and a small laceration pointed out to me by the biologists. I took photographs while the biologists began their work. I examined the trap set and did not observe any trapping law violations, there was no exposed bait observed, no feathers or any attractors, the spread of the jaw on the trap was measured and photographed and within the Maine law specifications.

The next day, Wildlife Biologist Scott Mclellan reported to me that he had found a part of a hip bone approximately 25 feet from the trap site further away (North) from the road. I responded to the area again and examined the bone with Sgt. Bill Chandler. Based on our training and trapping knowledge we both concluded that the bone was not used by the trapper as an attractant or exposed bait.

trap -5.5 KB coil spring trap modified with round bar lamination welded to the jaw and the jaws were offset with an approximately 3/8 inch gap between the jaws when closed. There were two in-line swivels in the trap chain and the trap was double staked with re-bar trap stakes. Across the jaw measured just under 5 3/8".

bait - store bought sausage (Sams Club)

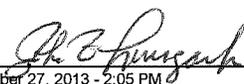
lure - O'Gormans Coyote Gland Lure

set--dirt hole

[REDACTED]

[REDACTED]

[REDACTED]

Printed For:   
Printed: October 27, 2013 - 2:05 PM

# Maine Warden Service Investigation Report

Case No. **WS13-M14266**  
Report No. **WS13-M14266.1**  
Report Date: **10/22/2013**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

# 2

Page 2 of 3

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

dispatched @ 0910 hrs

on scene @ 0930 hrs

Wld life Biologists on scene @ 1000

2233 clear scene @ 1130 hrs

## Offense Detail: 6892 - Trapping - Other

Offense Description **6892 - Trapping - Other**  
IBR Code  
IBR Group  
Crime Against  
Using  
Criminal Activity

Location **10 - Field/Woods**  
Offense Completed? **Yes**  
Hate/Bias **None (No Bias)**  
Domestic Violence **No**  
Weapons/Force

No. Prem. Entered  
Entry Method  
Type Security  
Tools Used

## Suspect S1: [REDACTED]

Suspect Number **S1**  
Name  
AKA  
Alert(s)  
Address  
CSZ  
Home Phone  
Work Phone

DOB  
Age  
Sex  
Race  
Ethnicity  
Ht.  
Wt.  
Eye Color  
Hair Color  
Hair Style  
Hair Length  
Facial Hair  
Skin  
Build  
Teeth

Place of Birth  
SSN  
DLN  
DLN State **Maine**  
DLN Country **United States of America**  
Occupation/Grade  
Employer/School  
Res. Country **Piscataquis**  
Res. Country **United States of America**  
Resident Status **Resident**

Scars/Marks/Tattoos  
Suspect MO  
Other MO  
Attire  
Habitual Offender  
Status  
MAINE Suspect  
Descriptor  
Suspect Notes

[REDACTED]

## Other Entity: O1 -- [REDACTED]

Entity Code **O1**  
Entity Type

Name  
AKA  
Alert(s)  
Address  
CSZ

DOB  
Age  
Sex  
Race  
Ethnicity  
Ht.

Place of Birth  
SSN  
DLN  
DLN State  
DLN Country  
Occupation/Grade

# Maine Warden Service Investigation Report

Case No. **WS13-M14266**  
Report No. **WS13-M14266.1**  
Report Date: **10/22/2013**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

# 3

Page 3 of 3

Home Phone [REDACTED]  
Work Phone [REDACTED]

Attire

Wt.  
Eye Color  
Hair Color  
Facial Hair  
Skin

Employer/School  
Res. County  
Res. Country  
Resident Status

**Piscataquis**  
**United States of America**

Entity Notes [REDACTED]

## Lynx Incidental Capture Report

Report No. 2013-TRP012

Lynx ID: LIC38

Name of Individual Reporting Capture: [REDACTED] trapper-(Predator Management Program), [REDACTED]  
[REDACTED]

Name of Biologist/Warden Responding to Report: District Warden John Lonergan, Biologist Scott McLellan

Type of Capture: Trap

*Set type:* Dirthole set

*Trap type and size:* Foothold – 1.75 - 2 coils, offset jaw

*Jaw spread and swivels:* 4 ½ inches, 2 swivels

*Staking:* staked, 10 inch chain

*Bait:* Caven-meat type

*Lure:* Fox Hollow

*Visibility of Bait:* None

*Legal Set?* Yes

Location of Capture: Sapling Twp. Stag Brook Rd.

Wildlife Management District: 8

GPS Coordinates (UTM preferred): 442067, 5047131

GPS Map Datum (NAD 83 preferred): WGS 84/NAD83

Date of Capture: 11/03/13

Disposition of Lynx: Alive, sedated, treated, and released on-site

Age/Sex: Subadult female; 19 lbs

### Description of events

**Response:** At 0851, Biologist Jen Vashon received a call on the lynx hotline from a trapper calling to report his capture of a lynx. Jen Vashon notified Warden Service and IFW biological staff in Greenville to initiate a response. Warden John Lonergan and MDIFW biologist Scott McLellan responded. The animal was sedated, examined for injuries, and given supportive care (hydrating fluids, antibiotics, and monitor vital signs) before being released on-site. Wdn. Lonergan examined the trap and interviewed the trapper for compliance with State trapping laws. The set was legal. Biologist Jen Vashon notified USFWS Special Agent Eric Holmes.

**Weather conditions:** Overnight: 28 degrees F with clear skies. Daytime: 40 degrees F with clear skies.

**Disturbance:** None reported or observed at site

**Assessment of the lynx:** The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, and torso were normal. A tiny amount of blood was observed on the capture foot. The area was examined but not discernible injury was located. The animal was given antibiotics and hydrating fluids. Body temperature was slightly below normal, the lynx was kept warm following established procedures. No broken, chipped, or missing teeth were observed. The animal was weighed and measured, ear tagged, and DNA samples were collected. The animal was a healthy suadult female and weighed 19lbs. The lynx was given an injection of yohimbine to reverse the effects of the sedative and observed during recovery in a portable dog crate. Upon recovery, she was observed walking away with full coordination and use of her limbs.

See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information.  
Report prepared by: Jennifer Vashon 11/15/13;

DATE: 11/3/13 WON LOWERGAN **Incidental Lynx Capture Form**

**Lynx ID#** LIC38

Observers: MCLELLAN FAMILY

Recorder: MCLELLAN WON LOWERGAN SAPLING TAIP

Time when manageable: 1051h

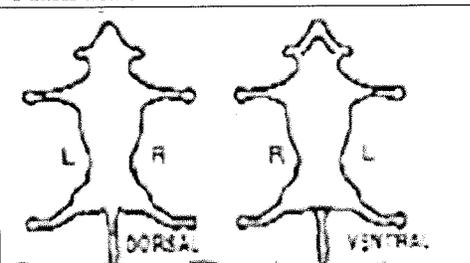
Road Name: STAG BROOK RD. County: PISCATAQUIS

Time of recovery/release: 1215h

UTM Me 45.575310 UTMn 69.742519 Datum: WGS84 NAD27 NAD83

|                                                                                                                                                 | Ketaset Concentration<br>100mg/ml | Xylazine Concentration<br>100mg/ml | Time         | Delivery Method     | Additional Drug (If Needed)    | Amount:Time        |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------------------|--------------|---------------------|--------------------------------|--------------------|
| 1 <sup>st</sup> Dose                                                                                                                            | <u>0.90</u> ml                    | <u>0.18</u> ml                     | <u>1040h</u> | <u>SYRINGE POLE</u> | Antibiotic (SC) 0.5cc/10lbs    | <u>1.0</u>         |
| 2 <sup>nd</sup> Dose                                                                                                                            | ml                                | ml                                 |              |                     | Yohimbine(IM) 0.5cc/20lbs      | <u>0.5 @ 1155h</u> |
| 3 <sup>rd</sup> Dose                                                                                                                            | ml                                | ml                                 |              |                     | Midazolam(IVorIM) 0.5cc/slowly |                    |
| 4 <sup>th</sup> Dose                                                                                                                            | ml                                | ml                                 |              |                     | Epinephrine(SCorIM) 0.5cc/10lb |                    |
| *If 2 <sup>nd</sup> dose is needed for cat that is not fully sedated (after 15-20 min), give half of the original dose of 5:1 ketaset/xylazine. |                                   |                                    |              |                     |                                |                    |
| *If a subsequent dose is given because the cat is recovering before the exam is complete give 0.1 cc/20lbs ketaset (100ml/mg)                   |                                   |                                    |              |                     |                                |                    |
| Hydrating fluids (SC) 150-200ml                                                                                                                 |                                   |                                    |              |                     |                                | <u>200ml</u>       |

Sex: M/F Estimated Age: Kitten Subadult Adult Year Born(if known) 2010 (POSSIBLY AN ADULT)  
 EarTag#(Left) 220 (Right) 220 Tag Color: YELLOW

| Subjective (Body Condition):<br>Poor <input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> | Objective                           |                                     | Mark abnormal area below:<br> | Body Temperature   | Time         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------|--------------|
|                                                                                                                                                                         | Normal                              | Abnormal                            |                                                                                                                  | Normal - 101-102.5 |              |
| Eyes/Ears                                                                                                                                                               | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                                                                                                  | <u>101.5</u> F     | <u>1059h</u> |
| Nose/Mouth                                                                                                                                                              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                                                                                                  | <u>100.9</u> F     | <u>1106h</u> |
| Neck/Torso                                                                                                                                                              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                                                                                                  | <u>100.7</u> F     | <u>1122h</u> |
| Skin                                                                                                                                                                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                                                                                                  | <u>100.2</u> F     | <u>1140h</u> |
| Extremities                                                                                                                                                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                                                                                                  |                    |              |

A **ment:** AT END OF PROCEDURE, I NOTICED A TINY AMOUNT OF BLOOD (MORE LIKE DISCOLORED H<sub>2</sub>O) ON TOP OF FOOT, WAS NOT VISIBLE INITIALLY.

**Plan:** Release/no sedation Sedation: Treat in field ANTIBIOTICS FLUIDS Sedate/Transport to Vet Euthanize COULD NOT FIND CALCIATION

**Teeth:** Normal Missing Broken Worn Describe: \_\_\_\_\_ Photo? side view (2) / front view

**Coat Condition:** Prime Summer Shedding Mange Bare/Worn Describe: \_\_\_\_\_

**Capture Foot?** Left Front Right Front Left Rear Right Rear  
**Capture Foot Injuries:** Yes or No Describe: N/A

| BODY MEASUREMENTS           |                   |  | LYNX IDENTIFICATION    |                         |                            |                       |
|-----------------------------|-------------------|--|------------------------|-------------------------|----------------------------|-----------------------|
| Weight (Actual or Estimate) | <u>19</u> lbs     |  | Lynx                   |                         | Bobcat                     |                       |
| Total Length                | <u>900</u> mm     |  | Tail Banding Pattern   | <u>No Bands</u>         | 1 Band                     | 2 Bands 3 Bands       |
| Chest Girth                 | <u>EX 385</u> mm  |  | Color of tip of tail   | <u>Completely Black</u> | Black on top/white beneath |                       |
| DNA Sample: Yes No          | <u>IN 395</u>     |  | Hind Foot Coloration   | <u>Grey</u>             | Dark Brown                 |                       |
| Hair Blood Tissue           | <u>NONE FOUND</u> |  | Ear Tuft Length        | <u>&gt;1 inch</u>       | <1 inch                    |                       |
| Parasites: Yes No           | <u>Sample Y N</u> |  | Toe Coloration: Yes No | <u>None</u>             | Left Front (I M M O)       | Right Front (I M M O) |
| Sparse Abundant             |                   |  |                        |                         | Left Rear (I M M O)        | Right Rear (I M M O)  |

Radio Collared: Y N Initial/Previously Collared Collar Works: Y N Make: LT Sirtrack ATS GPS SAT VHF  
 Frequency: \_\_\_\_\_ Replacement Collar Freq: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months Leather Circum: \_\_\_\_\_ mm

C **ments:** RECOVERED IN KENNEL, SLOW TO LEAVE AREA AT FIRST, BUT WHEN OBSERVED 15 MINUTES LATER, SHE WAS ALERT, COORDINATED + HAD FULL USE OF LIMBS

Photos? YES NO Photo Number WON LOWERGAN CAMERA Reviewed Data Sheet? YES NO

# Maine Warden Service Investigation Report

Case No. **WS13-023682**

Maine Warden Service  
284 State St  
Augusta, ME 04330  
207 287-2766

Report No. **WS13-023682.1**

**1**

Report Date: **11/3/2013 9:24:02 AM**

Page 1 of 1

Subject: **6780 - Endangered/Threatened Species**

|                           |                                   |
|---------------------------|-----------------------------------|
| Case Report Status        | <b>S - Submitted</b>              |
| Occurred On (and Between) | <b>11/3/2013 9:00:00 AM</b>       |
| Location of Incident      | <b>Stag Brook Rd, Sapling TWP</b> |
| Grid                      | <b>11257 - Greenville</b>         |
| Call Source               | <b>Phone</b>                      |

Date Entered **11/8/2013 12:55:37 PM**  
Entered By **11604 - Lonergan, John**

Reporting Officer  
**11604 - Lonergan, John**

Date Verified  
Verified By  
Date Approved  
Approved By  
Connecting Cases  
Disposition  
**Not a Crime/Other Service**

Date/Time Submitted  
**11/8/2013 1:41:42 PM**  
Assisted By

Clearance Reason  
Date of Clearance  
Reporting Agency  
**Maine Warden Service**  
**MWS - Section 12**  
Division  
Notified

Vehicle Activity  
Vehicle Traveling  
@ Cross Street

Geo Code **13739 - SAPLING TWP**

Local Geo Code

Entry Method  
Entry Point  
Suspect Vehicle  
Color  
Report Narrative

Suspect Actions(MO)  
Entry Direction  
Suspect Vehicle Body  
Style

On November 13,2013 at 0930 hrs I responded to the report of a lynx being caught in a trap on the Stag Brook Rd, near the East outlet. I responded and was on scene at 0937hrs; met with the trapper [REDACTED]. I secured the area and waited for IFW Wildlife Biologist Scott McLellan to arrive-Scott was on scene at 1020 hrs.

Scott assessed the cats condition and administered the anesthesia. I interviewed the trapper, photographed the scene, took the necessary information and examined the trap set and trap as well as the Lynx. I did not observe any violations on Maine trapping law. There was no exposed bait, the trap was measured( 4.5"), offset jaws, chain (10") and swivels(2) examined.

There were no visible attractors observed in the dirt hole set and the trap was staked.

## Offense Detail: 6892 - Trapping - Other

Offense Description **6892 - Trapping - Other**

IBR Code  
IBR Group  
Crime Against  
Using  
Criminal Activity

Location **10 - Field/Woods**  
Offense Completed? **Yes**  
Hate/Bias **None (No Bias)**  
Domestic Violence **No**  
Weapons/Force

No. Prem. Entered  
Entry Method  
Type Security  
Tools Used

## Witness W1: [REDACTED]

Witness Code **W1**  
Name [REDACTED]  
AKA [REDACTED]  
Alert(s)  
Address [REDACTED]  
CSZ

DOB [REDACTED]  
Age [REDACTED]  
Sex [REDACTED]  
Race [REDACTED]  
Ethnicity [REDACTED]  
Ht. [REDACTED]  
Wt. [REDACTED]  
Eye Color  
Hair Color  
Facial Hair  
Skin

Place of Birth  
SSN [REDACTED]  
DLN [REDACTED]  
DLN State [REDACTED]  
DLN Country [REDACTED]  
Occupation/Grade  
Employer/School  
Res. Country  
Res. Country  
Resident Status **United States of America Resident**

Home Phone [REDACTED]  
Work Phone  
Attire

Witness Notes [REDACTED]

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

Date 11/03/13 Time 0935 IFW Staff collecting caller info: JOHN LOWERCAN MWS

Trapper/Individual Reporting [Redacted] Address [Redacted] Phone number: [Redacted]

Town: [Redacted] **LYNX ID (w/o disturbing cat)**

Location: STAG BROOK RD, SARDINE TWP  
GPS coordinates N 45.575310 W 069.742519  
GPS datum (WGS84) NAD27 NAD83  
Directions and meeting time: STAGBROOK RD BY EAST OUTLET - IN ZAIRES

Blacktip tail Yes No  
Spotted Yes No  
Eartufts Yes No  
Large feet Yes No  
Grey legs Yes No

Type of trap? (Foot-hold) Conibear Cage Animal still in trap? (Yes) No  
When was trap last tended? 11/2/13  
Staking of Trap? (Staked) Drag Lynx appear injured? (Alive) Dead  
Is animal entangled? Yes (No) Animal's Behavior (Calm) Sleeping Pacing

Disturbance at the site? Yes (No) Other: \_\_\_\_\_  
Type of Disturbance: Vehicle traffic Hunters Equipment operation Animal disturbance

Current weather? (Clear) Rain Snow Windy Current temperature? 40°  
Overnight weather? (Clear) Rain Snow Windy Overnight temperature? 28°

2. Contact IFW via phone 502-473-4141 to coordinate response.  
3. If the animal is disturbed, disoriented, crowd and/or panic control.

### 4. At the site, assess the ANIMAL for chemical immobilization.

Animal entangled in vegetation? Yes (No)  
Unresponsive? Yes (No)  
Broken bones? Yes (No) If yes, Compound non-compound  
Bleeding? Yes (No) If yes, minor Major  
Laceration? Yes (No) If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
Limping/dragging limb? Yes (No)

### 5. Information when ON SITE:

Conibear 110 120 160 220 Other: \_\_\_\_\_  
Foot-hold trap type #1.75 #2 #3 MB 450 MB 550 Other: \_\_\_\_\_  
Inside jaw spread 4.5" inches Number of Swivels? 2  
Jaw type Padded Laminated (Offset) Number of coils: 2  
Securing method Staked Drag Chain length: 10' In-line spring? Yes (No)  
Bait? (Yes) No Type: DAVEN - MEAT TYPE Visible? Yes (No)  
Lure? (Yes) No Type: FOX HOLLOW Legal Set? (Yes) No

All people present 1 [Redacted] 2 [Redacted] 3 WDN LOWERCAN  
4 IFW BIOLOGIST SCOTT MCLELLAN 5 [Redacted] 6 [Redacted] 7 [Redacted]

### 6. After the collar, biological and complete capture form.

7. Action taken:

Release uninjured? Y/N Euthanized? Y/N Taken to veterinarian? Y/N  
Name & Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_

Comments: \_\_\_\_\_

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER \*advise caller to minimize disturbance to the animal\*

Date 11/3/13 Time 0851 IFW Staff collecting caller info: Jen Vashon  
 Trapper/Individual Reporting [Redacted]  
 Address [Redacted] Phone number: [Redacted]  
 Town: Sapling LYNX ID (w/o disturbing cat)  
 Location: Stag Brook Rd Blacktip tail Yes No  
 GPS coordinates \_\_\_\_\_ E \_\_\_\_\_ N Spotted Yes No  
 GPS datum WGS84 NAD27 NAD83 Eartufts Yes No  
 Directions and meeting time: East Outlet Parking - Rockwood Large feet Yes No  
 Grey legs Yes No

**Circle all info that applies**  
 Type of trap? Foot-hold Conibear Cage Animal still in trap? Yes No  
 When was trap last tended? \_\_\_\_\_ Alive Dead  
 Staking of Trap? Staked Drag Lynx appear injured? Yes No  
 Is animal entangled? Yes No Animal's Behavior Calm Sleeping Pacing  
 Disturbance at the site? Yes No Other: \_\_\_\_\_  
 Type of Disturbance: Vehicle traffic Hunters Equipment operation Animal disturbance

Current weather? Clear Rain Snow Windy Current temperature? \_\_\_\_\_  
 Overnight weather? Clear Rain Snow Windy Overnight temperature? \_\_\_\_\_

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation? Yes No  
 Unresponsive? Yes No  
 Broken bones? Yes No If yes, Compound non-compound  
 Bleeding? Yes No If yes, minor Major  
 Laceration? Yes No If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes No

## 5. Information when ON-SITE: **Circle all information that applies**

Conibear 110 120 160 220 Other: \_\_\_\_\_  
Foothold trap type #1.75 #2 #3 MB 450 MB 550 Other: \_\_\_\_\_  
 Inside jaw spread \_\_\_\_\_ inches Number of Swivels? \_\_\_\_\_  
 Jaw type Padded Laminated Offset Number of coils: \_\_\_\_\_  
 Securing method Staked Drag Chain length: \_\_\_\_\_ In-line spring? Yes No  
 Bait? Yes No Type: \_\_\_\_\_ Visible? Yes No  
 Lure? Yes No Type: \_\_\_\_\_ **Legal Set?** Yes No  
 All people present 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_  
 4 \_\_\_\_\_ 5 \_\_\_\_\_ 6 \_\_\_\_\_ 7 \_\_\_\_\_

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured? Y/N Euthanized? Y/N Taken to veterinarian? Y/N  
 Name&Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_

Comments: 0900 - Scott McEllan & Joba Conery are responding  
0907 - Eric Holmes arrived  
Full data sheet from Wdn. Loneran

**Lynx Incidental Capture Report**

**Report No. 2012-TRP007**

**Lynx ID: LIT7**

**Name of Individual Reporting Capture:**

**Name of Biologist/Warden Responding to Report:** Maine Warden Service and  
USFWS Law Enforcement

**Type of Capture:** Trap

*Set type:*

*Trap type and size:*

*Jaw spread and swivels:*

*Staking:*

*Bait:*

*Lure:*

*Visibility of Bait:*

*Legal Set?*

**Location of Capture:** T11 R7 Wels

**Wildlife Management District:** 5

**GPS Coordinates (UTM preferred):**

**GPS Map Datum (NAD 83 preferred):**

**Date of Capture:** 11/1/12

**Disposition of Lynx:** Dead

**Age/Sex:** Female

**Description of events**

**Response:** A dead lynx was found on the Pinkham road on 11/1/2012. The lynx had a trap on its foot and had been shot. During the course of the investigation, the shooter was identified and summonsed for a closed season violation. The trapping incident remains an open investigation.

A final report on this incident will be prepared after the investigation closes and any charges have been adjudicated.

Report prepared & updated by: Jennifer Vashon 11/13/12

Report reviewed by: Lt. Tom Ward and Wdn. Ethan Buuck 11/13/12

## Lynx Incidental Capture Report

Report No. 2013-TRP011

Lynx ID: LIC37

Name of Individual Reporting Capture: [REDACTED] trapper, [REDACTED]  
[REDACTED]

Name of Biologist/Warden Responding to Report: District Wardens Scott Martin and Seth Powers, Biologists Mark Caron and Allen Starr

Type of Capture: Trap

*Set type:* Dirthole

*Trap type and size:* Foothold – Northwoods 1 ½ - 2 coils, plain jaw

*Jaw spread and swivels:* 4 5/8 inches, 2 swivels

*Staking:* staked, 16 inch chain

*Bait:* Beaver, Cheese, dog food, fox lure mix

*Lure:* fox urine

*Visibility of Bait:* No

*Legal Set?* Yes

Location of Capture: T 1 R8 Wels/Grindstone

Wildlife Management District: 10

GPS Coordinates (UTM preferred): 525467 5064762

GPS Map Datum (NAD 83 preferred): NAD 83

Date of Capture: 10/28/13

Disposition of Lynx: Alive, sedated, treated, and released

Age/Sex: Adult female; 20 lbs

### **Description of events**

**Response:** At 0819, Warden Martin responded to the call from a trapper that he caught a lynx. Wdn Martin contacted the lynx hotline. Wardens Martin and Powers and biologists Mark Caron and Allen Starr responded. The animal was sedated, examined for injuries, and given supportive care (hydrating fluids, antibiotics, monitor vital signs, and injury treated following established procedures) before being released. Wdn. Martin examined the trap and interviewed the trapper for compliance with State trapping laws. The set was legal. Biologist Jen Vashon notified USFWS Special Agent Eric Holmes of the capture.

**Weather conditions:** Overnight: ~35 degrees F with clear skies. Daytime: 38 degrees F, cloudy, and slight wind.

**Disturbance:** None reported or observed at site

**Assessment of the lynx:** The animal was sedated and examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, and torso were normal. A small laceration was observed on the second toe of the left front capture foot. Body temperature was slightly below normal, the lynx was kept warm following established procedures. No broken, chipped, or missing teeth were observed. The animal was a female and weighed 20 lbs. The lynx was given antibiotics, subcutaneous fluids, and the laceration was cleaned following established procedures. The lynx was measured, weighed, ear tagged, and DNA was collected. An injection of yohimbine was given to reverse the effects of the sedative and the lynx was observed during recovery in a portable dog crate. Upon recovery, the lynx was observed walked away without a visible limp.

See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information.  
Report prepared by: Jennifer Vashon 11/6/13;

DATE: 10/28/13  
 Observers: Caron Sturgis, Powers, Mark  
 Recorder: Caron  
 Road Name: Red Pine Rd  
 UTMe 525467 UTMn 5064762

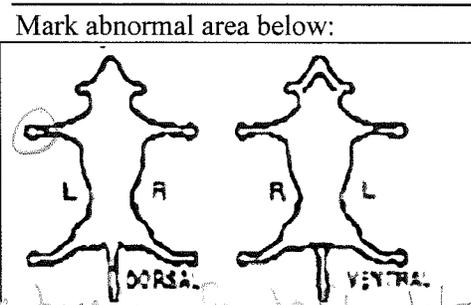
**Incidental Lynx Capture Form**  
 Town: Grindstone Twp  
 County: PENOBSCOT  
 Datum: WGS84 NAD27 NAD83

**Lynx ID#** LIC37  
 Time when manageable: 10:53  
 Time of recovery/release: 12:20

|                      | Ketaset<br>Concentration<br>mg/ml | Xylazine<br>Concentration<br>mg/ml | Time         | Delivery<br>Method | Additional Drug<br>(If Needed)  | Amount       |
|----------------------|-----------------------------------|------------------------------------|--------------|--------------------|---------------------------------|--------------|
| 1 <sup>st</sup> Dose | <u>0.45</u> ml                    | <u>0.5</u> ml                      | <u>10:43</u> | <u>jab</u>         | Antibiotic (SCorIM) 0.5cc/10lbs | <u>1cc</u>   |
| 2 <sup>nd</sup> Dose | ml                                | ml                                 |              |                    | Yohimbine (IVorIM) 0.5cc/20lbs  | <u>11:36</u> |
| 3 <sup>rd</sup> Dose | ml                                | ml                                 |              |                    | Midazolam (IVorIM) 0.5cc/slowly |              |
| 4 <sup>th</sup> Dose | ml                                | ml                                 |              |                    | Epinephrine (SCorIM) 0.5cc/10lb |              |
| Comments:            | Doxapram (IVorSL) 1.0cc/22lbs     |                                    |              |                    |                                 |              |

Sex: M  F  **Estimated Age:** Kitten Subadult  Adult  Year Born (if known) \_\_\_\_\_  
**Ear Tag#** (Left) 242 (Right) 242 Tag Color: yellow

**Subjective (Body Condition):**  
 Poor  Fair  Good  Excellent   
**Objective** Normal  Abnormal   
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities



| Body Temperature   |   | Time         |
|--------------------|---|--------------|
| Normal - 101-102.5 |   |              |
| <u>98.6</u>        | F | <u>10:56</u> |
| <u>100.4</u>       | F | <u>11:34</u> |
| <u>100.5</u>       | F | <u>11:10</u> |
| <u>100.5</u>       | F | <u>11:25</u> |

**Assesment:** caught by two middle toes on front feet, blood small cut. treated

**Plan:** Release/no sedation  Sedation: Treat in field  fluids - SQ irrigate / talus spray Sedate/Transport to Vet  Euthanize

**Teeth:** Normal Missing  Broken  Worn  Describe: \_\_\_\_\_ Photo? side view (2) / front view

**Coat Condition:** Prime Summer  Shedding  Mange  Bare/Worn  Describe: \_\_\_\_\_

**Capture Foot?** Left Front  Right Front  Left Rear  Right Rear

**Capture Foot Injuries:** Yes  or No  Describe: small cut on end toe

| BODY MEASUREMENTS                                                                            |                 |                                              |                             | LYNX IDENTIFICATION          |                            |                             |  |
|----------------------------------------------------------------------------------------------|-----------------|----------------------------------------------|-----------------------------|------------------------------|----------------------------|-----------------------------|--|
| Weight (Actual or Estimate)                                                                  | <u>20.2</u> lbs |                                              |                             | <b>Lynx</b>                  |                            | <b>Bobcat</b>               |  |
| Total Length                                                                                 | <u>948</u> mm   | <b>Tail Banding Pattern</b>                  | <u>No Bands</u>             | 1 Band                       | 2 Bands                    | 3 Bands                     |  |
| Chest Girth                                                                                  | <u>390</u> mm   | <b>Color of tip of tail</b>                  | <u>Completely Black</u>     | Black on top/white beneath   |                            |                             |  |
| <b>DNA Sample:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>       |                 | <b>Hind Foot Coloration</b>                  | <u>Grey</u>                 | Dark Brown                   |                            |                             |  |
| Hair <input type="checkbox"/> Blood <input type="checkbox"/> Tissue <input type="checkbox"/> | Mouth Swab      | <b>Ear Tuft Length</b>                       | <u>&gt;1 inch x 43.6mm</u>  | <1 inch                      |                            |                             |  |
| <b>Parasites:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>        |                 | <b>Toe Coloration</b><br>(circle white toes) | <u>Left Front (I M M O)</u> | <u>Right Front (I M M O)</u> | <u>Left Rear (I M M O)</u> | <u>Right Rear (I M M O)</u> |  |
| Sparse <input type="checkbox"/> Abundant <input type="checkbox"/>                            | Sample Y N      |                                              |                             |                              |                            |                             |  |

**Radio Collared:** Y  N  **Initial/Previously Collared** Collar Works: Y  N  **Make:** LT Sirtrack ATS GPS  SAT  VHF   
 Frequency: \_\_\_\_\_ Replacement Collar Freq: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months Leather Circum: \_\_\_\_\_ mm

**Comments:** Small split in right rear - old Red Pine Rd. off Roberts Rd  
N 45° 44' 9.03" Recovered in kennel - walked off fence  
W 38° 40' 21.72" no visible limp

Photos? YES  NO  Photo Number \_\_\_\_\_ Reviewed Data Sheet? YES  NO

Scott Martin has photos on his camera.

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER \*advise caller to minimize disturbance to the animal\*

Date 10-28-13 Time 8:56 AM IFW Staff collecting caller info: SCOTT MARTIN  
 Trapper/Individual Reporting \_\_\_\_\_  
 Address \_\_\_\_\_ Phone number: \_\_\_\_\_  
 Town: T-1-RS Grandstone LYNX ID (w/o disturbing cat) \_\_\_\_\_  
 Location: Near Roberts Rd  
 GPS coordinates N 45° 44' 8.75" W 68° 40' 21.72"  
 GPS datum WGS84 NAD27 NAD83  
 Directions and meeting time: Huber Rd to Roberts Rd Turn left at 5.5 mile  
1 mile Down Road. Lynx on Right

|               |                                     |    |
|---------------|-------------------------------------|----|
| Blacktip tail | Yes                                 | No |
| Spotted       | Yes                                 | No |
| Eartufts      | <input checked="" type="checkbox"/> | No |
| Large feet    | <input checked="" type="checkbox"/> | No |
| Grey legs     | <input checked="" type="checkbox"/> | No |

Circle all info that applies

Type of trap?  Foot-hold  Conibear  Cage  
 Animal still in trap?  Yes  No  
 When was trap last tended? 0830 10-27-13  
 Staking of Trap?  Staked  Drag  
 Lynx appear injured?  Alive  Dead  
 Is animal entangled?  Yes  No  
 Animal's Behavior  Calm  Sleeping  Pacing  
 Disturbance at the site?  Yes  No  
 Other: \_\_\_\_\_  
 Type of Disturbance:  Vehicle traffic  Hunters  Equipment operation  Animal disturbance

Current weather?  Clear  Rain  Snow  Windy  
 Current temperature? 38 Deg  
 Overnight weather?  Clear  Rain  Snow  Windy  
 Overnight temperature? 35 Deg

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation?  Yes  No  
 Unresponsive?  Yes  No  
 Broken bones?  Yes  No If yes,  Compound  non-compound  
 Bleeding?  Yes  No If yes,  minor  Major  
 Laceration?  Yes  No If yes,  superficial (through 1st layer of skin)  major (deep requires sutures)  
 Limping/dragging limb?  Yes  No

## 5. Information when ON-SITE: Circle all information that applies

Conibear 110 120 160 220 Other: \_\_\_\_\_  
 Foothold trap type #1.75 #2 #3 MB 450 MB 550 Other: Northwoods 1 1/2  
 Inside jaw spread 4 5/8 inches Number of Swivels? 2  
 Jaw type Padded Laminated Offset  Req Number of coils: 2  
 Securing method  Staked  Drag Chain length: 16" In-line spring? Yes  No  
 Bait?  Yes  No Type: Bacon/Cheese/Dog Food/Fox Lure Visible? Yes  No  
 Lure?  Yes  No Type: Fox Lure Legal Set?  Yes  No  
 All people present 1 \_\_\_\_\_ 2 Self Powers (w/dw) 3 Allen Starr (B.O)  
 4 Mark Caron (B.O) 5 Scott Martin (w/dw) 6 \_\_\_\_\_ 7 \_\_\_\_\_

## 6. Anesthesia (follow protocol and complete capture form)

### 7. Action Taken:

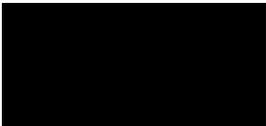
Release uninjured? Y/N Euthanized? Y/N Taken to veterinarian? Y/N  
 Name & Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_

Comments: \_\_\_\_\_

# Call For Service

CFS Number: **WS13-023217**  
Date: **10/28/2013 8:18:23 AM**

## Call For Service

|                  |                                                        |                  |                                                                                     |
|------------------|--------------------------------------------------------|------------------|-------------------------------------------------------------------------------------|
| CFS Number       | <b>WS13-023217</b>                                     | Complainant      |  |
| Date             | <b>10/28/2013 8:18:23 AM</b>                           | Address          |  |
| Dispatcher       |                                                        | City, State, Zip |  |
| Call Source      | <b>0 - Phone</b>                                       | Phone            |  |
| Received         | <b>8:19:40 AM</b>                                      | Call type        |                                                                                     |
| Dispatched       | <b>8:56:49 AM</b>                                      | Reported Offense | <b>6892 - Trapping - Other</b>                                                      |
| Arrived          |                                                        | Verified Offense | <b>6780 - Endangered/Threatened Species</b>                                         |
| Cleared          | <b>10:20:04 AM</b>                                     | Tow Company      |                                                                                     |
| Location         | <b>lat 45.723 lon -68.761; t1 r8 wels, red pine rd</b> | Vehicle          |                                                                                     |
| City, State, Zip | <b>T1 R8 Wels</b>                                      | Vehicle License  |                                                                                     |
| Jurisdiction     | <b>W13 - Section 13</b>                                | Disposition      | <b>2 - Inactive</b>                                                                 |
| Grid             | <b>19816 - T1 R8 WELS</b>                              | Priority         |                                                                                     |
| Sector           | <b>WE82</b>                                            | Classification   |                                                                                     |
| Map              |                                                        | Agency           | <b>MWS - Maine Warden Service</b>                                                   |
| X Coordinate     |                                                        | Case             |                                                                                     |
| Y Coordinate     |                                                        | Reviewed On      | <b>11/4/2013 8:42:21 AM</b>                                                         |
| Reviewed By      | <b>10321 - Scott, Dan</b>                              |                  |                                                                                     |

### Officers

10634 - Martin, Scott  
12173 - Powers, Seth

Notes 2247 warden Scott Martin 60 miles 5 hours. Responded to a incidental catch of a lynx by a trapper. Investigated the scene and found no violations. Assisted biologists with the release of the lynx. Sent scanned document of lynx form and pictures to Jen Vashon, Mark Caron, Lt Tom Ward.

=====  
CLOSED CALL FOR  
SERVICE=====

### INCIDENT INFORMATION

-----CAD EVENT NUMBER: 130023217 OFFENSE CODE:  
wsre AGENCY: wm (CAD) JURISDICTION: ws (CAD) SECTOR:  
e13 (CAD) GRID: 758 (CAD) CREATED: 20131028 08:19:40 REPORTED:  
20131028 08:18:23 OCCURRENCE START: 20131028 -1 OCCURRENCE END: -1 -1  
CLOSED: 20131028 10:20:21 CALL TAKER: lhall, d, hr02  
DISPATCHER: lhall, d, hr02 MODIFIED BY: lhall, hr02 [RESPONSIBLE  
MEMBER] MEMBER: [10634] martin, scott UNIT: ws2247 GROUP ID:  
warden [ATTENDED] [LOCATION] ADDRESS: lat 45.723 lon -68.761; t1 r8 wels, red pine rd  
CITY: t1 r8 wels LAT/LON: 4572295,-6876067 LOCATION  
DETAILS: incident [INCIDENT DETAILS]need a warden ref to another lynx in his trap. he is not sure if it

# Call For Service

CFS Number: **WS13-023217**

Date: **10/28/2013 8:18:23 AM**

is alive or not. he is on his way there right now to check it

out=====

SUBJECTS=====

=====

=

VEHICLES=====

=====

BUSINESSES=====

=====

===

DISPOSITIONS=====

=====

----- [DETAILS] CODE: 6892 DISPOSITION DATE/TIME:

20131028 10:20:21 DEVICE: hr02 PERSON ID: lhall [MISCELLANEOUS]

CREATED DATE: 0 CREATED TIME: 0 MODIFIED BY OPERATOR: lhall

MODIFIED BY WORKSTATION: hr02 LAST MODIFIED: 20131028

102019=====

==

MESSAGES=====

=====

==

NCICReplies=====

=====

== ACTIVITY

LISTS=====

-----[hr02, lhall]: (called adv that 2245 and 2246 are

very familiar with him and he has all ready spoken with both of the about same issue prior to this. )-----

-----[hr02, lhall]: (waiting for 2246 to call in to sign 10-

8)=====

INCIDENT

ASSOCIATIONS=====

=====

## Lynx Incidental Capture Report

Report No. 2013-TRP003

Lynx ID: LIC32

Name of Individual Reporting Capture: [REDACTED]

Name of Biologist/Warden Responding to Report: District Warden Paul Mason and Will Shuman, Biologist Scott McLellan

Type of Capture: Trap

*Set type:*

*Trap type and size:* Foothold – 1.75 - 4 coils,

*Jaw spread and swivels:* 4 7/8 inches, 3 swivels

*Staking:* drag, 6 ft chain

*Bait:* trout and mice

*Lure:* fox urine

*Visibility of Bait:* None

*Legal Set?* Yes

Location of Capture: TA R11- Bog Pond Rd

Wildlife Management District: 9

GPS Coordinates (UTM preferred): 486451, 5056401

GPS Map Datum (NAD 83 preferred): NAD 83

Date of Capture: 10/23/13

Disposition of Lynx: Alive, sedated, treated, and taken to veterinarian

Age/Sex: Subadult female; 17.5 lbs

### **Description of events**

**Response:** At 1435, Warden Paul Mason responded to the call from a trapper that caught a lynx. Greenville Headquarters called the lynx hotline to report the capture and initiate a response. Biologist Jen Vashon notified USFWS Special Agent Eric Holmes. MDIFW biologists Scott McLellan and Wdns. Mason and Shuman responded. The animal was sedated, examined for injuries and given supportive care (hydrating fluids, antibiotics, monitor vital signs, and injury treated following established procedures) before being transported to a veterinarian. Wdn. Mason examined the trap and interviewed the trapper for compliance with State trapping laws. The set was legal.

**Weather conditions:** Overnight: 30 degrees F with clear skies. Daytime: 45 degrees F with clear skies.

**Disturbance:** None reported or observed at site

**Assessment of the lynx:** The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, and torso were normal. Extremities: the ulna and radius were fractured, although blood was observed there was no obvious break in the skin. Body temperature was normal. No broken, chipped, or missing teeth. The animal was a subadult female and weighed 17.6lbs. The animal was given antibiotics, hydrating fluids, and the leg was splinted. The lynx was transported to and examined by a Maine veterinarian. After reviewing the x-ray, the veterinarian recommended that the lynx be treated at Tufts Cumming School of Veterinary Medicine in Massachusetts a facility designated by the USFWS to treat threatened and endangered species. Veterinarians at Tufts repaired the fracture on 10/25/13. Veterinarians expect a full recovery and return to the wild.

See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information.  
Report prepared by: Jennifer Vashon 11/1/13;

DATE: 10/23/13  
 Observers: PM, WS, SRM  
 Recorder: MCCLELLAN  
 Road Name: BOG POND RD.  
 UTMe 486457 UTMn 5056401

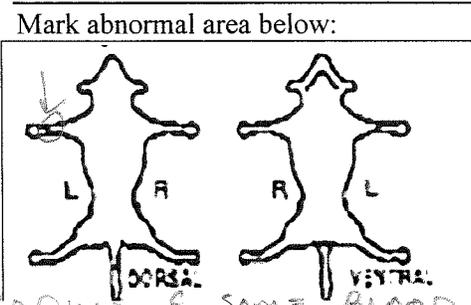
**Incidental Lynx Capture Form**  
 Town: TA RII WELLS  
 County: PISCATAQUIE  
 Datum: WGS84 NAD27 NAD83

**Lynx ID#** LIC 32  
 Time when manageable: 1734h  
 Time of recovery/ release: RECOVERED IN TRUCK

|                      | Ketaset Concentration | Xylazine Concentration | Time         | Delivery Method    | Additional Drug (If Needed)     | Amount      |
|----------------------|-----------------------|------------------------|--------------|--------------------|---------------------------------|-------------|
| 1 <sup>st</sup> Dose | <u>0.90</u> ml        | <u>0.18</u> ml         | <u>1723h</u> | <u>SPRINGE POK</u> | Antibiotic (SCorIM) 0.5cc/10lbs | <u>0.90</u> |
| 2 <sup>nd</sup> Dose | ml                    | ml                     |              |                    | Yohimbine (IVorIM) 0.5cc/20lbs  |             |
| 3 <sup>rd</sup> Dose | ml                    | ml                     |              |                    | Midazolam (IVorIM) 0.5cc/slowly |             |
| 4 <sup>th</sup> Dose | ml                    | ml                     |              |                    | Epinephrine (SCorIM) 0.5cc/10lb |             |
| Comments:            |                       |                        |              |                    | Doxapram (IVorSL) 1.0cc/22lbs   |             |

Sex: M F Estimated Age: Kitten Subadult Adult Year Born (if known) 2012 ESTIMATED  
 Ear Tag# (Left) \_\_\_\_\_ (Right) \_\_\_\_\_ Tag Color: \_\_\_\_\_ → TAGS WILL BE APPLIED PRIOR TO RELEASE

**Subjective (Body Condition):**  
 Poor  Fair  Good  Excellent   
**Objective** Normal  Abnormal   
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities



| Body Temperature   | Time         |
|--------------------|--------------|
| Normal - 101-102.5 |              |
| <u>99.7</u> F      | <u>1750h</u> |
| <u>98.2</u> F      | <u>1803h</u> |
| <u>97.9</u> F      | <u>1815h</u> |
| F                  |              |

**Assesment:** BROKEN ULNA + RADIUS & SOME BLOOD MATTED IN HAIR WHERE BREAK IS, BUT NO OBVIOUS BREAK IN SKIN

Pla... Release/no sedation Sedation: Treat in field SPLINT INJURY Sedate/Transport to Vet Euthanize

**Teeth:** Normal Missing Broken Worn Describe: \_\_\_\_\_ Photo? side view (2) / front view

**Coat Condition:** Prime Summer Shedding Mange Bare/Worn Describe: BETWEEN SUMMER + PRIME BUT CLOSER TO PRIME

**Capture Foot?** Left Front Right Front Left Rear Right Rear

**Capture Foot Injuries:** Yes or No Describe: \_\_\_\_\_

| BODY MEASUREMENTS                                                                         |                |  |  | LYNX IDENTIFICATION                |                   |                            |                                    |
|-------------------------------------------------------------------------------------------|----------------|--|--|------------------------------------|-------------------|----------------------------|------------------------------------|
| Weight (Actual or Estimate)                                                               | <u>7.5</u> lbs |  |  | Lynx                               |                   | Bobcat                     |                                    |
| Total Length                                                                              | mm             |  |  | Tail Banding Pattern               | No Bands          | 1 Band                     | 2 Bands 3 Bands                    |
| Chest Girth                                                                               | mm             |  |  | Color of tip of tail               | Completely Black  | Black on top/white beneath |                                    |
| DNA Sample: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>           |                |  |  | Hind Foot Coloration               | Grey              | Dark Brown                 |                                    |
| Hair Blood Tissue                                                                         | Mouth Swab     |  |  | Ear Tuft Length                    | >1 inch           | <1 inch                    |                                    |
| Parasites: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <u>UNK</u> |                |  |  | Toe Coloration (circle white toes) | Left Front (IMMO) | Right Front (IMMO)         | Left Rear (IMMO) Right Rear (IMMO) |

Radio Collared: Y N Initial/Previously Collared Collar Works: Y N Make: LT Sirtrack ATS GPS SAT VHF  
 Frequency: \_\_\_\_\_ Replacement Collar Freq: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months Leather Circum: \_\_\_\_\_ mm

Comments: LYNX KEPT IN KENNEL IN SCOTT MCCLELLAN'S HOUSE NIGHT OF 10/23, TRANSPORTED TO [REDACTED] MORNING OF 10/24, WHERE X-RAYS WERE TAKEN + DECISIONS TO FOLLOW, + THEN TRANSPORTED TO TUFTS UNIVERSITY DURING AFTERNOON OF 10/24

Photos? YES NO Photo Number WON, MASON'S CAMERA Reviewed Data Sheet? YES NO BY SIM CONNOLLY + RYAN ROBICHEAU  
GAVE 1/2 SALINE BAG TO HER WHILE SHE WAS ANESTHETIZED

DATE: 10/24/13  
 Observers: SHEPHERD, MCLELLAN  
 Recorder: MCLELLAN  
 Road Name: LISBON RD.

**Incidental Lynx Capture Form**  
 Town: [REDACTED]  
 County: ANDROSCOGGIN

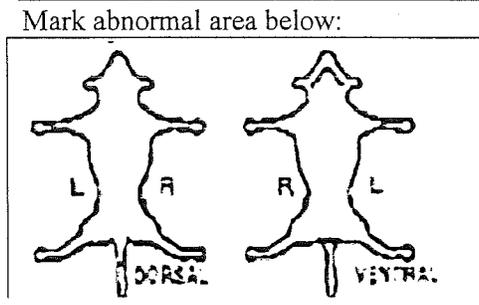
**Lynx ID#**  
 Time when manageable: 1022h  
 Time of recovery/release: RECOVERED IN KENNEL

UTMe \_\_\_\_\_ UTMn \_\_\_\_\_ Datum: WGS84 NAD27 NAD83

|                      | Ketaset Concentration         | Xylazine Concentration | Time  | Delivery Method | Additional Drug (If Needed)     | Amount |
|----------------------|-------------------------------|------------------------|-------|-----------------|---------------------------------|--------|
| 1 <sup>st</sup> Dose | 0.80 ml                       | 0.15 ml                | 1012h | SYRINGE PUMP    | Antibiotic (SCorIM) 0.5cc/10lbs | 1.00   |
| 2 <sup>nd</sup> Dose |                               |                        |       |                 | Yohimbine (IVorIM) 0.5cc/20lbs  |        |
| 3 <sup>rd</sup> Dose |                               |                        |       |                 | Midazolam (IVorIM) 0.5cc/slowly |        |
| 4 <sup>th</sup> Dose |                               |                        |       |                 | Epinephrine (SCorIM) 0.5cc/10lb |        |
| Comments:            | Doxapram (IVorSL) 1.0cc/22lbs |                        |       |                 |                                 |        |

Sex: M F **Estimated Age:** Kitten Subadult Adult Year Born (if known) \_\_\_\_\_  
**Ear Tag#** (Left) \_\_\_\_\_ (Right) \_\_\_\_\_ **Tag Color:** \_\_\_\_\_

**Subjective (Body Condition):**  
 Poor  Fair  Good  Excellent   
**Objective** Normal Abnormal  
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities    
**Assesment:**



| Body Temperature   | Time |
|--------------------|------|
| Normal - 101-102.5 |      |
| F                  |      |
| F                  |      |
| F                  |      |
| F                  |      |

**Plan:** Release/no sedation Sedation: Treat in field \_\_\_\_\_ Sedate/Transport to Vet Euthanize

**Teeth:** Normal Missing Broken Worn Describe: \_\_\_\_\_ Photo? side view (2) / front view

**Coat Condition:** Prime Summer Shedding Mange Bare/Worn Describe: \_\_\_\_\_

**Capture Foot?** Left Front Right Front Left Rear Right Rear

**Capture Foot Injuries:** Yes or No Describe: \_\_\_\_\_

| BODY MEASUREMENTS            |     | LYNX IDENTIFICATION                |                  |                        |                            |            |
|------------------------------|-----|------------------------------------|------------------|------------------------|----------------------------|------------|
| Weight (Actual or Estimate)  | lbs | Tail Banding Pattern               | Lynx             |                        | Bobcat                     |            |
| Total Length                 | mm  |                                    | No Bands         | 1 Band 2 Bands 3 Bands |                            |            |
| Chest Girth                  | mm  | Color of tip of tail               | Completely Black |                        | Black on top/white beneath |            |
| DNA Sample: Yes No           |     | Hind Foot Coloration               | Grey             |                        | Dark Brown                 |            |
| Hair Blood Tissue Mouth Swab |     | Ear Tuft Length                    | >1 inch          |                        | <1 inch                    |            |
| Parasites: Yes No            |     | Toe Coloration (circle white toes) | Left Front       | Right Front            | Left Rear                  | Right Rear |
| Sparse Abundant Sample Y N   |     |                                    | (I M M O)        | (I M M O)              | (I M M O)                  | (I M M O)  |

**Radio Collared:** Y N **Initial/Previously Collared** Collar Works: Y N **Make:** LT Sirtrack ATS GPS SAT VHF  
 Frequency: \_\_\_\_\_ Replacement Collar Freq: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months Leather Circum: \_\_\_\_\_ mm

**Comments:** JIM CONNOLLY + RYAN ROBICHEAU TRANSPORTED LYNX @ 1145h TO TUFTS UNIVERSITY FOR A SURGERY THAT WILL TAKE PLACE ON 10/25

Photos? YES NO Photo Number \_\_\_\_\_ Reviewed Data Sheet? YES NO

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER \*advise caller to minimize disturbance to the animal\*

Date 10-23-13 Time 11:00 IFW Staff collecting caller info: MASON, PAUL  
 Trapper/Individual Reporting \_\_\_\_\_  
 Address \_\_\_\_\_ Phone number: \_\_\_\_\_  
 Town: TARII LYNX ID (w/o disturbing cat)  
 Location: Bog Pond Rd, South of Bog Pond  
 GPS coordinates \_\_\_\_\_ E \_\_\_\_\_ N  
 GPS datum WGS84 NAD27 NAD83  
 Directions and meeting time: Bog Pond Rd, TARI I at 1630 hrs

|               |                                     |    |
|---------------|-------------------------------------|----|
| Blacktip tail | <input checked="" type="checkbox"/> | No |
| Spotted       | <input checked="" type="checkbox"/> | No |
| Eartufts      | <input checked="" type="checkbox"/> | No |
| Large feet    | <input checked="" type="checkbox"/> | No |
| Grey legs     | <input checked="" type="checkbox"/> | No |

Circle all info that applies

Type of trap?  Foot-hold  Conibear  Cage  Animal still in trap?  Yes  No  
 When was trap last tended? 10-22-13  Alive  Dead  
 Staking of Trap?  Staked  Drag  Lynx appear injured?  Yes  No  
 Is animal entangled?  Yes  No  Animal's Behavior  Calm  Sleeping  Pacing  
 Disturbance at the site?  Yes  No Other: \_\_\_\_\_  
 Type of Disturbance:  Vehicle traffic  Hunters  Equipment operation  Animal disturbance

Current weather?  Clear  Rain  Snow  Windy  Current temperature? 45°F  
 Overnight weather?  Clear  Rain  Snow  Windy  Overnight temperature? 30°F

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation?  Yes  No  
 Unresponsive?  Yes  No  
 Broken bones?  Yes  No If yes,  Compound  non-compound  
 Bleeding?  Yes  No If yes,  minor  Major  
 Laceration?  Yes  No If yes,  superficial (through 1st layer of skin)  major (deep requires sutures)  
 Limping/dragging limb?  Yes  No

## 5. Information when ON-SITE:

Circle all information that applies

Conibear 110 120 160 220 Other: \_\_\_\_\_  
 Foot-hold trap type  #1.75  #2  #3  MB 450  MB 550 Other: \_\_\_\_\_  
 Inside jaw spread 4 7/8 inches  Number of Swivels? 3  
 Jaw type  Padded  Laminated  Offset  Number of coils: 4  
 Securing method  Staked  Drag  Chain length: 6 ft  In-line spring? Yes  No  
 Bait?  Yes  No  Type: Trout / mice  Visible? Yes  No  
 Lure?  Yes  No  Type: Fox Urine  Legal Set?  Yes  No

All people present  
 1 Scott McLellan 2 PAUL MASON 3 Will Shuman  
 4 \_\_\_\_\_ 5 \_\_\_\_\_ 6 \_\_\_\_\_ 7 \_\_\_\_\_

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured?  Y  N  Euthanized?  Y  N  Taken to veterinarian?  Y  N

Name & Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_

Comments: \_\_\_\_\_

# Call For Service

CFS Number: **WS13-M14320**

Date: **10/23/2013**

## Call For Service

---

CFS Number **WS13-M14320**  
Date **10/23/2013**  
Dispatcher  
Call Source **0 - Phone**  
Received **2:35:00 PM**  
Dispatched  
Arrived  
Cleared  
Location **Ta R11 Wls**  
City, State, Zip **TA R11 WELLS**  
Jurisdiction **W11 - Section 11**  
Grid **11748 - TA R11 WELS**  
Sector  
Map  
X Coordinate  
Y Coordinate  
  
Reviewed By

Complainant [REDACTED]  
Address [REDACTED]  
City, State, Zip [REDACTED]  
Phone [REDACTED]  
Call type  
Reported Offense **6780 - Endangered/Threatened Species**  
Verified Offense **6780 - Endangered/Threatened Species**  
  
Tow Company  
Vehicle  
Vehicle License  
Disposition **1 - Active**  
Priority  
Classification  
  
Agency **MWS - Maine Warden Service**  
Case **WS13-M14320**  
Reviewed On

### Officers

12174 - Mason, Paul

12159 - Shuman, Will

Notes Lynx in trap near Long Pond Road

2226/Mason- 4 reg hr/2OT hrs- responded to Lynx in trap near Bog Pond in TAR11 with C1, 2235, and Biologist Scott McLellan. Took report from trapper, assisted biologist with locating trap, releasing animal, splinting its broken leg, and contacting vet services. See Case Report

## Lynx Conservation in Montana

### Summary

Montana Fish, Wildlife and Parks (MFWP) has made great effort to aid in the conservation of lynx. Lynx are categorized as a Species of Greatest Conservation Need in Montana's State Wildlife Action Plan, and this designation has helped direct funding for on-the-ground actions such as conservation easements. Other programs such as the Crucial Areas Planning System have been put in place to help guide future developments that can impact lynx habitat. To date MFWP has protected 765,117 acres within lynx range in western Montana, and MFWP and its partners in Montana have invested over \$30 million and protected over 40,000 acres of critical lynx habitat with easements or fee purchases. Montana has modified its trapping regulations to reduce the potential for incidental capture of lynx, and educational programs have been instituted in a continued effort to help avoid incidental captures. Overall, the rate of lynx killed or injured from trapping activities is very low relative to the population and trapping effort. Lynx were listed as threatened due to a lack of regulatory authority related specifically to the National Forest planning process. Given that the USFS planning process has been resolved and much effort has been made to conserve habitat of lynx and protect them from human-caused mortality, we believe that an incidental take permit allowing a small level of "take" via captures incidental to otherwise lawful trapping will not interfere with population growth or stability in Montana.

### State Planning for Wildlife Conservation

Montana has implemented two broad-reaching efforts, the State Wildlife Action Plan (SWAP) and Crucial Areas Planning System (CAPS), which guide large-scale planning to benefit wildlife, including lynx.

**SWAP** – A major guiding document for wildlife conservation is Montana's State Wildlife Action Plan <http://fwp.mt.gov/fishAndWildlife/conservationInAction/swap2015Plan.html>. The first Action Plan, called the Comprehensive Fish and Wildlife Conservation Strategy, was approved by the U.S. Fish and Wildlife Service in 2006. It was updated and revised in 2015 and is now officially called the State Wildlife Action Plan, or SWAP. It identifies habitat community types, Focal Areas, and species in Montana with significant issues that warrant conservation attention. The plan is not meant to be an FWP plan, but a plan to guide conservation throughout Montana by any agency, NGO or whoever has an interest in strategic application of conservation actions. It is intended as a plan that guides and facilitates real and measurable conservation on the ground.

The plan identifies 128 Species of Greatest Conservation Need (SGCN), including lynx. In addition to identifying species, their associated habitats were prioritized as Community Types of Greatest Conservation Need (CTGCN). Current impacts, future threats, and conservation actions were identified for these areas and were intended to be implemented across an entire community to get "the biggest bang for the buck." To further pinpoint areas of greatest conservation need, Focal Areas were identified. FWP staff identified these Focal Areas to guide attention to specific geographical areas that are in greatest need of conservation and to help focus conservation efforts in an increasingly inadequate funding environment.

To prioritize need and associated actions relative to threats, both the Community Types and the Focal Areas have been put into Tiers, with Tier I being those with the highest priority.

Lynx and their habitat are figure repeatedly in the SWAP. It is listed as a Species of Greatest Conservation Need, and its habitats are identified in four different Community Types, all Tier I, and in all the Focal Areas, again Tier I, within those Community Types.

“Montana Fish, Wildlife and Parks identified lynx and lynx habitat as a conservation priority in the state’s 2005 State Wildlife Action Plans as well as all subsequent plans. To date, the state agency and its partners have invested more than \$30 million to permanently protect nearly 40,000 acres of designated critical lynx habitat. These lands were some of the most important unprotected lynx habitat in the western U.S. and are now being managed by the state agency, with an emphasis on habitat conservation and improvement.”<sup>1</sup>

SWAPs are in place in all states, and are providing similar guidance and opportunity to conserve lynx broadly. As noted by Mawdsley et al. (2015), “Thirteen states included lynx as a Species of Greatest Conservation Need in their 2005 State Wildlife Action Plans. Colorado, Idaho, Maine, Michigan, Minnesota, Montana, New Hampshire, New York, Ohio, Utah, Vermont, Washington and Wyoming — which cover most of the species’ range in the lower 48 states — can use federal State Wildlife Grant funding for conservation activities benefitting the species.”<sup>1</sup>

**CAPS** – In addition to SWAP, Montana has also developed a Crucial Areas Planning System (CAPS) <http://fwp.mt.gov/fishAndWildlife/conservationInAction/crucialAreas.html> In 2008 FWP took the lead in conducting a statewide Crucial Areas Assessment. The Assessment evaluated fish, wildlife and recreational resources in Montana to identify crucial areas and fish and wildlife corridors. The Assessment is part of a larger conservation effort that recognizes the importance of landscape scale management of species and habitats by fish and wildlife agencies.

The result, in part, is a Web-based Crucial Areas Planning System (CAPS), an FWP mapping application aimed at future planning for a variety of development and conservation purposes so fish, wildlife, and recreational resources can be considered earlier. The assessment has:

- Created digital GIS-layer maps depicting important species and habitat information.
- Assessed risks to fish, wildlife, and their habitats.
- Created management guidelines and examples for residential development, energy development, and transportation projects.
- Developed partnerships with government, industry, county planners and non-government organizations to develop implementation strategies and facilitate integration of CAPS into their planning processes.

---

<sup>1</sup> Mawdsley, J., J. Vore, and E. Odell. 2015. The Elusive Canada Lynx: How State Conservation Efforts Are Advancing Recovery. *The Wildlife Professional* 10(1):22-25.

Local, regional, and statewide decision makers, developers, and FWP staff understand that it's important to have easy access to practical tools and information early in the planning process.

With this objective in mind, CAPS:

- Provides an easy-to-use and understandable way to help plan for development, conserve land, and protect the character and quality of life of Montana's communities;
- Help developers know up front where to expect greater expense and potential mitigation costs and issues; and
- Help make smarter development choices and pass on to future generations the quality of life Montanans enjoy today.

### Land Protections

Montana Fish, Wildlife and Parks has been very active in conserving important wildlife habitat, including many that have benefitted lynx. To date FWP has protected 765,117 acres within lynx range in western Montana (Table 1, Figure 1). This includes both fee title properties such as Fishing Access Sites, State Parks, and Wildlife Management Areas, and those protected by conservation easement. Although one might reasonably question the value of Fishing Access Sites to lynx, it is important to remember that dispersing lynx often use riparian areas. A radio-collared lynx dispersing from Colorado was found dead of natural causes along the Bitterroot River in the mid-2000s. Nearly half (368,100 acres or 48% of the total) of this land has been conserved through projects initiated and completed since lynx were federally protected in 2000 such as the 142,015 acre Thompson/Fisher conservation easement. Additionally, 44 properties that had been conserved prior to 2000 have been supplemented, for example the Beartooth Wildlife Management Area. Originally purchased in 1970 it was enlarged most recently in 2014 by adding 2,840 acres, bringing the total of that property to 35,174 acres. "In northwestern Montana, monitoring suggests lynx are occupying suitable habitat and population numbers are stable as a result of considerable investments in land easements and statutory protections on federal lands." <sup>1</sup>

Ongoing habitat conservation efforts are continuing including the Specimen Creek (730 acres), Haskill Basin (3,020 acres), Trumbull Creek (7,150 acres), and Whitefish Watershed (15,334 acres) conservation projects that will protect an additional 26,234 acres of lynx habitat in northwestern Montana.

Table 1. Properties and acres conserved within the range of Canada lynx in western Montana by Montana Fish, Wildlife and Parks by fee title or conservation easement.

| Fee Title or Conservation Easement<br>Purchase Dates | Properties |         |
|------------------------------------------------------|------------|---------|
|                                                      | Number     | Acres   |
| Entire project before 2000                           | 275        | 124,761 |
| Original purchase before 2000 with additions since   | 44         | 272,256 |
| Entire project after 2000                            | 108        | 368,100 |
| Total                                                | 427        | 765,117 |

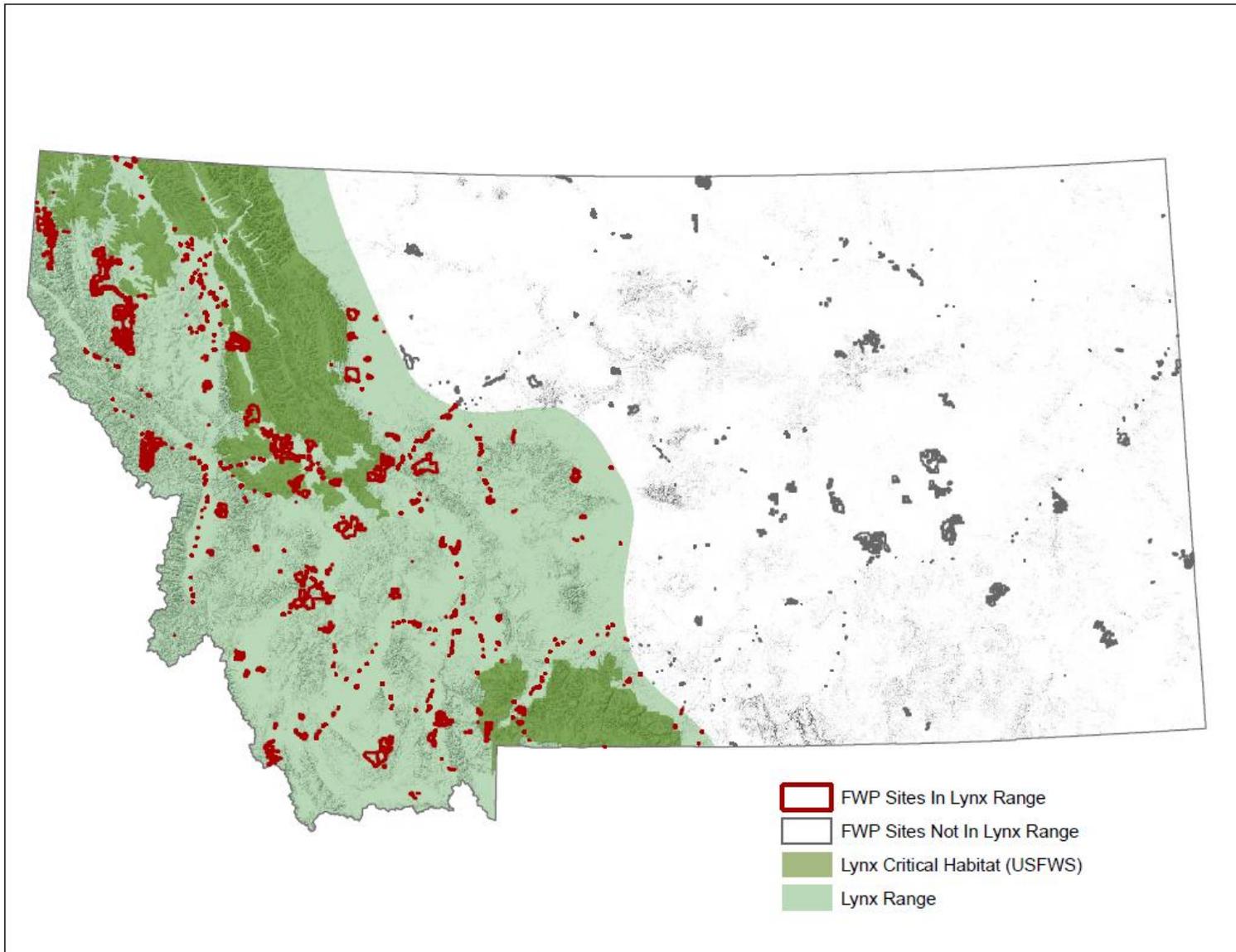


Figure 1. Four hundred twenty seven properties totaling 765,117 acres conserved by Montana Fish, Wildlife and Parks by fee title or conservation easement within the range of Canada lynx in Montana.

In addition to Montana Fish, Wildlife and Parks, a number of other agencies and organizations have been active in habitat conservation. These include, but are not limited to, The Rocky Mountain Elk Foundation, The Nature Conservancy, the Wildlife Conservation Society, and at least eight local land trusts (Table 2).

Table 2. Local land trusts engaged in habitat conservation in western Montana.

| Name                       | Town      |
|----------------------------|-----------|
| Prickly Pear Land Trust    | Helena    |
| Gallatin Valley Land Trust | Bozeman   |
| The Trust for Public Land  | Bozeman   |
| Flathead Land Trust        | Kalispell |
| Montana Land Reliance      | Helena    |
| Five Valleys Land Trust    | Missoula  |
| Bitter Root Land Trust     | Hamilton  |
| The Conservation Fund      | Missoula  |

### Incidental Lynx Take 2000–2015.

In total, 16 lynx have been captured during the 16-year period. Seven of these lynx were killed, one of the 16 lynx was released with an injury, and eight of the 16 lynx were released uninjured. The average “take” has been 1.0 lynx per year over the 16 year period. Since significant changes to trapping regulation in 2008, the amount of take has decreased. A total of 3 lynx were captured during the 8 license years 2008-2015, and all were released uninjured. Overall, lynx “take” during 2000-2007 averaged 1.6/year, and during 2008-2015, when more protective regulations were in place, averaged 0.4/year, a four-fold decrease.

The following narratives describe all known incidental lynx captures occurring during the last 16 years, from the 2000-2001 license year (winter 2000/01) to present, including the most recent 2015-2016 license year.

- 1) The first incidental capture occurred on 01/07/2001 near Seeley Lake in Missoula County. This lynx was captured in an elevated marten set (#00 foothold) by a front foot/toes. The animal was turned into the Squires USFS lynx research team for financial compensation. They determined the animal required rehabilitation from starvation and frost damaged toes. One toe was removed and the animal was held, recovered and then later released. It either already had a radio-collar or a collar was placed on the lynx prior to release. Released, Injured.
- 2) This incidental capture occurred on 01/12/2001 near Lincoln in Lewis & Clark County. This lynx was captured and killed in a #330 conibear trap set for wolverine. This was an elevated leaning pole set using a large diameter tree. The trapper reported the incidental capture immediately to the local warden, in following with state regulation requirements. The local warden reported it was a legal set according to state regulations. The lynx was collared, so the warden recovered the animal with assistance from the Squires USFS lynx research team. The collar was removed and the animal given to FWP, which went to the FWP wildlife lab. Killed. This trap is not legal in LPZs at present. It was not recessed, it was larger than 5”, its leaning pole was >4”.
- 3) Another incidental capture reported in 2001 occurred prior to 01/23/2001 when at that time a lynx was

recovered near Ovando in Powell County by a local warden and the Squires USFS lynx research team. The lynx appeared to have been captured in a #4 foothold trap. The warden determined this was a bobcat set. The animal was found dead approximately 30 yards away from the trap. The Squires team was made aware of the mortality because it was a collared animal with a mortality sensor. There were some lacerations and swelling on a foot. The animal was apparently either released or pulled out of the set and moved away. Killed. This trap is not legal in LPZs at present as #4 traps are 6 ¼”.

- 4) A young male lynx was reported dead on 3/5/2001 that had been caught in a small #2 double spring foothold trap near Ovando in the Spring Creek area (T16N, R14W, Sec. 15) in Powell County. The radio-collared lynx with the trap on a front foot had broken the anchoring wire and apparently drug around the trap for days. When the lynx was discovered by the Squires USFS lynx research team, the trap wire was tangled up on branches of a tree. The lynx appeared to have starved to death. This type of trap likely had been set for marten, but the incidental capture occurred weeks after the season had closed. Killed. This is an attending in manner of waste violation.
- 5) A single lynx was captured and released during the 2004-2005 winter trapping season. It was captured and released uninjured in the Middle Fork of the Flathead River by a bobcat trapper. Other than the incidental capture being reported in Flathead County, no other specific information was provided. Released, Uninjured.
- 6) A Eureka trapper reported that on 12/12/2005 he captured a female lynx in the Brimstone Creek area (T33N, R25W, Sec. 4) in Flathead County in a foothold trap while trapping for bobcats. He reported releasing the lynx uninjured. Released, Uninjured.
- 7) A Kalispell trapper reported that during December 2005 he caught a lynx in a foothold trap while trapping for bobcats in the Fitzsimmons Creek area (T34N, R24W, Sec. 4) in Lincoln County. This lynx was reported to be released uninjured. Released, Uninjured.
- 8) A Eureka trapper reported that on 1/02/2006 he captured and killed a lynx in a lethal snare set that was intended for wolverine in the Ten Lakes area (T37N, R24W, Sec. 6) in Lincoln County. The lynx was found dead in the snare so the carcass was recovered by FWP personnel. Killed.
- 9) A Seeley Lake area trapper reported that on 12/24/2006 he captured a large male lynx in the Uhler Creek area (T18N, R16W, Sec. 18) in Missoula County in a foothold trap while trapping for bobcats. The trapper reported that he released the lynx uninjured. Released, Uninjured.
- 10) Warden Derek Schott handled an incidental lynx captured on 1/6/2007. This was a male lynx, Missoula County, Placid Creek Drainage. TRS 16N 16W 21. The lynx was dead in a conibear. Killed.
- 11) The Squires USFS lynx research team reported that during February 2007 a radio-collared male lynx was found dead in the Fawn Creek drainage (UTM 305603 E, 5231479 N) near Seeley Lake in Missoula County. It died as a result of being captured in a #1 Victor foothold trap that had become entangled in dog-hair tree branches and likely starved to death. This trap was probably intended as a marten set. Killed.
- 12) During the 2007-2008 season a lynx was found dead in a #120 conibear trap set for marten. Unsure if it was a radio-collared research animal. Killed.
- 13) Also during the 2007-2008 season, a lynx was reported captured in a foothold trap set for wolverine and was then released uninjured in the Kalispell or Eureka area. Released, Uninjured.
- 14) A Libby trapper reported on 12/17/2012 that the previous week he had captured and released a lynx from a bobcat set. This lynx was captured west of Lake Koocanusa in the Steep Creek drainage at the 12 MM (T34N, R29W, Sec. 7) in Lincoln County. It was released uninjured and had an ear tag from previous research

efforts in the area by the Squires USFS lynx research team. Released, Uninjured.

- 15) A Eureka area trapper reported that on 12/23/2013 he incidentally captured a lynx in a wolf trap. This occurred on US Forest Service land near MM 5 ¾ in the Boulder Creek drainage (T36N, R29W, Sec. 34) in Lincoln County. The uninjured lynx was released immediately in accordance with state wolf trapping regulations and reported to the local game warden that same day. This was determined to be a legal wolf set. The local Game Warden documented the incident. Released, Uninjured.
- 16) On 12/17/2014 a lynx was incidentally captured and reported in Lincoln County. The lynx was captured in a bobcat set and released via a capture pole. No major injuries were apparent and the lynx did not limp away. The trapper notified Montana Fish, Wildlife and Parks as required. The site was investigated the next day, and the set was legal. Released, Uninjured.

### Trapping Regulation Changes

Trapping of lynx was prohibited by the Montana Fish, Wildlife and Parks Commission during 1999. Since that time, there have been a number of changes to hunting and trapping regulations to minimize incidental take of lynx. These include provisions in both FWP's furbearer and wolf regulations.

### **Chronology of Regulation Changes to Protect Lynx from Incidental Capture**

#### **Quick Summary:**

- 1999 FWP closed lynx season, required reporting of incidental injured or killed lynx, required recessed trigger for large ground-set conibears, added track ID info to regulations to help trappers identify and avoid lynx capture.
- 2000 USFWS lists lynx as a threatened species
- 2002 All incidental captures of lynx (including released uninjured) required reported within 5 days.
- 2008 Language added to discourage placing sets that might attract lynx. New regulations to minimize incidental lynx capture were adopted in regions 1 and 2 (lynx regions): Lethal snares prohibited for bobcat sets, leaning pole sets limited to <4" pole and must be 48" above ground for marten, fisher, and wolverine.
- 2012 Wolf trapping initiated with regulations including no use of snares or conibears for wolves, trapper certification class required including topic of avoiding incidental capture, 48 hour trap check mandatory.
- 2013 Expanded 2008 regulations to portions of regions 3, 4, and 5. Added requirement for 10 lbs pan tension on wolf traps.
- 2015 Lynx Protection Zones established on public lands in USFWS's critical habitat in two areas, NW Montana and Greater Yellowstone. Additional regulations include: no use of rabbit or hare parts and no use of natural flagging within 30 ft.; No fresh meat baits; Snare cable size and loop diameter limited; Bobcat sets must be checked every 48 hrs and are limited to a maximum jaw size of 5 3/8" or a 10 lbs pan tension

**Details:** \* denotes biennial season setting process when changes can be made to furbearer regulations

1999

- FWP Commission closed lynx season prior to ESA listing in March 2000.
- Animal cat tracks & species identification differences between lion, lynx & bobcat were first illustrated in the furbearer trapping regulations to avoid misidentification and trapping in lynx areas.
- *New Regulation – Lynx Season Closed* - Accidentally trapped lynx that cannot be released uninjured must be immediately reported to Fish, Wildlife & Parks.
- *New Regulation – Body-gripping Ground Sets* – On public land, ground sets using 7 X 7 or larger body-gripping traps must have a trigger recessed a minimum of seven (7) inches within a secure enclosure that provides openings no greater than fifty-two (52) square inches each.

2000\*

- No changes.

2001

- No changes.
- USFWS provided a 10-year Biological Opinion on the bobcat CITES tagging program that allowed two dead and two released uninjured lynx captured in bobcat sets.

2002\*

- *New Regulation – Lynx – Closed Season.* Accidentally trapped and released lynx (uninjured) must be reported to a designated Fish, Wildlife & Parks employee within five (5) days of release. Trappers that accidentally capture a lynx that cannot be released uninjured must immediately notify a designated Fish, Wildlife & Parks employee for assistance to determine disposition and/or collection of the animal. It is unlawful for any person to retain possession of a furbearer after a species limit has been met, a trapping district quota has been reached, or a season is closed (MCA 87-3-501).

2003

- No changes.

2004\*

- No changes.

2005

- No changes.

2006\*

- No changes.

2007

- No changes.

2008\*

- *New Regulation – Lynx – Closed Season.* Lynx are protected by federal law under the Endangered Species Act. Avoid placing sets that might attract lynx. Accidentally trapped lynx that are uninjured must be released immediately and the incident must be reported to a designated Fish, Wildlife & Parks employee within five (5) days of release. Incidental Take – Furbearers that are accidentally captured when the season is closed or trapper limit is met that cannot be released uninjured must notify a designated Fish, Wildlife & Parks employee residing in the trapping district where the animal was taken within 24 hours to arrange collection of the animal. It is unlawful for any person to retain possession of an incidentally taken furbearer per MCA 87-1-102.
- *New Regulation – Special Bobcat Regulations in Trapping Districts 1 and 2* – To minimize the incidental capture of lynx the following special bobcat regulations apply in a portion of Trapping Districts 1 and 2. See legal description, page 10. Bobcat Snares – Lethal snares are prohibited in all bobcat sets.
- *New Regulation – Special Marten Regulations in Trapping Districts 1 and 2* – To minimize the incidental capture of lynx the following special marten regulations apply in a portion of Trapping Districts 1 and 2. See legal description, page 10. Leaning Pole Sets – Pole diameter must be no larger than 4 inches for

- pole sets with trap and bait 48 inches above the ground.
- **New Regulation – Special Fisher Regulations in Trapping Districts 1 and 2** – To minimize the incidental capture of lynx the following special fisher regulations apply in a portion of Trapping Districts 1 and 2. See legal description, page 10. Leaning Pole Sets – Pole diameter must be no larger than 4 inches for pole sets with trap and bait 48 inches above the ground.
- **New Regulation – Special Wolverine Regulations in Trapping Districts 1 and 2** – To minimize the incidental capture of lynx the following special wolverine regulations apply in a portion of Trapping Districts 1 and 2. See legal description, page 10. Leaning Pole Sets – Pole diameter must be no larger than 4 inches for pole sets with trap and bait 48 inches above the ground.

2009

- No changes.

2010\*

- No changes.

2011

- No changes.

2012\*

- Wolf trapping initiated with the following regulations to aid in prevention of capturing lynx: Trapper certification class required and avoidance of incidental capture covered in class; 48 hour wolf trap check required; Conibears and snares for wolves prohibited.

2013

- **Expanded Regulations – Special Bobcat, Marten, Fisher, and Wolverine in Trapping Districts 1, 2 and portions of 3, 4 & 5.** Language same as above.
- Minimum 10 lbs. pan tension required for wolf traps to avoid lynx and other incidentals.

2015

- New regulations establish lynx protection zones with additional restrictions. The following are taken from Montana's Furbearer Regulations and apply specifically to those portions of the state identified as Lynx Protection Zones. These regulations are the result of a legal settlement. In the case of issuing an Incidental Take Permit these regulations would no longer be required, but the Fish and Wildlife Commission could, at its discretion, opt to retain some or all of them.

**Lynx Protection Zones –**

To help avoid the incidental capture of Canada lynx, special regulations now apply on all public lands in areas identified as "Lynx Protection Zones" (LPZ). Within an LPZ, all trap sets for any species must be consistent with the following special regulations:

- Rabbit or hare parts, whether for flagging purposes or for bait, may not be used within 30 feet of a set trap.
- The use of natural flagging such as bird wings, feathers, or pieces of fur may not be used within 30 feet of a set trap.
- The use of fresh meat baits (aged less than 24 hours) is not allowed.
- All leaning pole sets must use poles that are no larger than 4 inches in diameter and have the trap and bait located at least 48 inches above the ground.
- The use of Conibear or "body-gripping" traps are not allowed unless **one** of the following conditions are met:

- ▶ they are placed as part of a water set; or
  - ▶ they are placed as part of an elevated set (48 inches above ground) that does not include a leaning pole; or
  - ▶ they have a jaw spread of less than or equal to 5 inches (a Conibear #120 or smaller); or
  - ▶ they are placed in a leaning pole set with a pole diameter of no larger than 4 inches and with trap and bait located at least 48 inches above the ground; or
  - ▶ they are placed with a trigger recessed a minimum of seven inches and contained in a wood, plastic, or metal enclosure or cubby with an opening no larger than 52 square inches.
- The use of snares are not allowed unless **all** conditions below are met:
    - ▶ they have a cable diameter greater than or equal to 5/64 inches; and
    - ▶ they have loops that are larger than 8 inches measured from side to side; and
    - ▶ they are equipped with a breakaway lock device designed to release when more than 350 pounds of force is applied.
  - **For trappers targeting Bobcat**, the use of foothold or leghold traps are not allowed unless traps have an inside jaw spread (perpendicular to hinge) of less than or equal to 5 3/8 inches. Trappers targeting bobcat are required to visually check their traps at least once every 48 hours. Only relaxing snares are allowed in bobcat sets. A description of a relaxing snare can be found on page 15.
  - Foothold or leghold traps set for wolves in the LPZ can be larger than 5 3/8 inches but must be equipped and set with a minimum 10 pound pan tension device.
  - “Take” of lynx is not allowed due to their federal status as a threatened species. Incidental captures, whether the lynx is released uninjured, is injured, or killed are all considered “take” according to the definition set by federal law and used by the U.S. Fish and Wildlife Service,
  - Trappers are strongly encouraged to not set traps if lynx are observed in an area or if lynx tracks are identified. Trappers are also strongly encouraged to use live traps (e.g. box trap) and carry catchpoles to aid in the safe release of non-target species.
  - Incidentally trapped lynx that are uninjured must be released immediately and the incident must be reported to the local FWP warden or biologist or an FWP Regional Office within 24 hours of release. If a lynx is injured, trappers must immediately notify their local FWP warden or biologist or an FWP Regional Office, to determine disposition and/or collection of the animal. Persons who know about the taking of a lynx should report it by calling 1-800-TIP-MONT (800-847-6668).

## Lynx Incidental Capture Report

Report No. 2013-TRP010

Lynx ID: NA

Name of Individual Reporting Capture: Retired Game Warden [REDACTED] and [REDACTED], trapper,  
[REDACTED]

Name of Biologist/Warden Responding to Report: District Warden Dave Milligan

Type of Capture: Trap

*Set type:*

*Trap type and size:* Foothold – MB550 - 2 coils, offset jaws

*Jaw spread and swivels:* 5 3/8 inches, 2 swivels

*Staking:* staked, 12-16 inch chain

*Bait:*

*Lure:* unknown

*Visibility of Bait:* No

*Legal Set?* Yes

Location of Capture: T 9 R11 Wels; 12 mile on the 522 rd.

Wildlife Management District: 5

GPS Coordinates (UTM preferred): 489595, 5138855

GPS Map Datum (NAD 83 preferred): WGS84/NAD 83

Date of Capture: 10/27/13

Disposition of Lynx: Alive and released on-site

Age/Sex: unknown- released by Wdn. Milligan

### **Description of events**

**Response:** At 1213, Warden Johansen received a report from State Police advising that a trapper had caught a lynx in the Haymock Lake Area. Wdn. Johansen advised State Police to contact an Ashland Warden since he was working another case, was not in the area, and would not be able to respond. At 1300, Warden David Milligan received a call from State Police advising him about the lynx and explained that a code 1000 (State Police Emergency) had been in progress when the call was received. Retired Warden [REDACTED] had made the call for the trapper from satellite phone at his sporting camp. Wdn. Milligan was not able to reach [REDACTED] and learn the location of the lynx until 1530. Wdn. Milligan called the lynx hotline and discussed the appropriate response with biologist Jen Vashon. Given Wdn. Milligan's closer proximity to the site, the late hour, and more than 3 hours before a biologist could reach the site, it was decided that Wdn. Milligan should respond, assess the potential for injury, and release the lynx if uninjured. Wdn. Milligan and Jen Vashon discussed procedures for assessing and releasing the lynx if uninjured. Jen Vashon notified USFWS Special Agent Eric Holmes. The lynx was released and Wdn. Milligan examined the trap for compliance with State trapping laws. Wdn. Johansen interviewed the trapper on 10/28/13. The set was legal.

**Weather conditions:** Overnight: rain and windy. Daytime: 35 degrees F, light rain and windy.

**Disturbance:** None observed while on-site; likely some vehicle traffic, but probably just a few vehicles since it was a Sunday (no hunting or logging activities).

**Assessment of the lynx:** Wdn. Milligan observed the lynx prior to release; the lynx was very calm, and there was no obvious injury. Wdn. Milligan released the lynx using a catch pole with a loose loop. The lynx was very docile and watched Wdn. Milligan release the trap. Upon release, the lynx bounded off and appeared unharmed and in very good shape.

See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information.  
Report prepared by: Jennifer Vashon 11/6/13;

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER *\*advise caller to minimize disturbance to the animal\**

Date 10/27/2013 Time 1100 IFW Staff collecting caller info: \_\_\_\_\_  
 Trapper/Individual Reporting \_\_\_\_\_  
 Address \_\_\_\_\_ Phone number: \_\_\_\_\_  
 Town: T9 R11 WELS *489594E, 513875W* **LYNX ID (w/o disturbing cat)**  
 Location 12 mile on 522 road  
 GPS coordinates N46°24.1912 E W69°8.1219 N  
 GPS datum WGS84 NAD27 NAD83  
 Directions and meeting time: \_\_\_\_\_

|               |     |    |
|---------------|-----|----|
| Blacktip tail | Yes | No |
| Spotted       | Yes | No |
| Eartufts      | Yes | No |
| Large feet    | Yes | No |
| Grey legs     | Yes | No |

*Circle all info that applies*

Type of trap? Foot-hold Animal still in trap? Yes  
 When was trap last tended? 10/26/2013 Alive  
 Staking of Trap? Staked Lynx appear injured? No  
 Is animal entangled? No Animal's Behavior Calm  
 Disturbance at the site? No Other: \_\_\_\_\_  
 Type of Disturbance: Vehicle traffic Hunters Equipment operation Animal disturbance  
 Current weather? Rain Windy Current temperature? 35F  
 Overnight weather? Rain Windy Overnight temperature?

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL *prior* to chemical immobilization

Animal entangled in vegetation? No  
 Unresponsive? No  
 Broken bones? No If yes, Compound non-compound  
 Bleeding? No If yes, minor Major  
 Laceration? No If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? No

## 5. Information when ON-SITE:

*Circle all information that applies*

Conibear 140 120 160 220 Other: \_\_\_\_\_  
 Foothold trap type MB 550 Other: \_\_\_\_\_  
 Inside jaw spread 5 3/8" inches Number of Swivels? 2  
 Jaw type off-set Number of coils: 2  
 Securing method Staked Chain length 12-16" In-line spring? Yes No  
 Bait? No Type: \_\_\_\_\_ Visible? No  
 Lure? Yes No Type: Unknown Legal Set? Yes

All people present Warden David Milligan 2 \_\_\_\_\_ 3 \_\_\_\_\_  
 4 \_\_\_\_\_ 5 \_\_\_\_\_ 6 \_\_\_\_\_ 7 \_\_\_\_\_

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured? yes Euthanized? no Taken to veterinarian? no

Name&Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_

Comments: This form was partially filled out on 10-28-13 by Warden Robert Johansen after meeting with \_\_\_\_\_ (trapper) in the Chamberlain Parking lot.

The following comments are those of Warden David Milligan. I received a call from the State Police at about 1300 hours on 10-27-13, advising that \_\_\_\_\_ had caught another Lynx in the Haymook Lake area. The dispatcher explained that there had been a "Signal 1000", (which basically means that there was an emergency situation going on with the state police), at the time the call came in. This may explain why the dispatcher did not know if the Lynx had been released or not. She advised that the call had come from Retired Warden \_\_\_\_\_. I called \_\_\_\_\_ and left a message for him to call back to let me know if the lynx had been released and if not, where it was, as well as where I would find the trapper. \_\_\_\_\_ called back at 1530hrs and advised the lynx was still in the trap at about 8 1/2 mile on the 522 road. I made the 1 1/2 hour ride into the woods and met \_\_\_\_\_ at 8 mile. We were unable to find the lynx at the described location. After an hour of looking we split up \_\_\_\_\_ went south looking and I north. At about 1800hrs I found the lynx about five miles to the north. Jenifer Vashon had given me directions over the phone on how to release a lynx unharmed. I used the catch pole with a loose loop and released the Lynx fairly easily. It was vary docile and just watched as I took the trap off. The lynx bounded off unharmed and looked in very good shape. The trap was a legal set. The weather was cold, breezy, and raining lightly. I made contact with Jennifer Vashon that night when I got back to town and advised her of how it went. I think it may have been better for the lynx if the trapper had released it immediately. While we were looking for it \_\_\_\_\_ saw a fisher not too far from the Lynx.

# Call For Service

CFS Number: **WS13-023176**

Date: **10/27/2013 12:12:43 PM**

## Call For Service

|                  |                                                           |                  |                                             |
|------------------|-----------------------------------------------------------|------------------|---------------------------------------------|
| CFS Number       | <b>WS13-023176</b>                                        | Complainant      | ██████████                                  |
| Date             | <b>10/27/2013 12:12:43 PM</b>                             | Address          | ██████████                                  |
| Dispatcher       |                                                           | City, State, Zip | ██████████                                  |
| Call Source      | <b>0 - Phone</b>                                          | Phone            | ██████████                                  |
| Received         | <b>12:13:46 PM</b>                                        | Call type        |                                             |
| Dispatched       | <b>12:33:24 PM</b>                                        | Reported Offense | <b>6892 - Trapping - Other</b>              |
| Arrived          |                                                           | Verified Offense | <b>6780 - Endangered/Threatened Species</b> |
| Cleared          |                                                           | Tow Company      |                                             |
| Location         | <b>lat 46.261 lon -69.152; t7 r11 wels, haymock lakes</b> | Vehicle          |                                             |
| City, State, Zip | <b>T7 R11 Wels</b>                                        | Vehicle License  |                                             |
| Jurisdiction     | <b>W12 - Section 12</b>                                   | Disposition      | <b>1 - Active</b>                           |
| Grid             |                                                           | Priority         |                                             |
| Sector           | <b>WD45</b>                                               | Classification   |                                             |
| Map              |                                                           | Agency           | <b>MWS - Maine Warden Service</b>           |
| X Coordinate     |                                                           | Case             |                                             |
| Y Coordinate     |                                                           | Reviewed On      |                                             |
| Reviewed By      |                                                           |                  |                                             |

### Officers

11396 - Johansen, Robert

10060 - Milligan, David

Notes 2236 - Johansen - Houlton reported this to me and I was unable to make contact with ██████████ or Lynx Biologists via satellite phone. Given the information provided by ██████████ I was well out of position to respond and asked Houlton RCC to contact a Warden out of Ashland to see if anyone was closer. I was investigating a report of night hunting a moose in the Caucomgomoc Lake/Mountain Pond area.

2258- Milligan- 140 truck miles, 1.5 regular hours, 3 OT hours, and 3 regular hours for filling out reports and phone calls with biologists. . I received a call from the State Police at about 1300 hours on 10-27-13, advising that ██████████ had caught another Lynx in the Haymock Lake area. The dispatcher did not know if the Lynx had been released or not but advised that the call had come from Retired Warden ██████████. I called ██████████ and left a message for him to call back to let me know if the lynx had been released and if not, where it was, as well as where I would find the trapper. ██████████ called back at 1530hrs and advised the lynx was still in the trap at about 8 1/2 mile on the 522 road. I made the 1 1/2 hour ride into the woods and met ██████████ at 8 mile. We were unable to find the lynx at the described location. After an hour of looking we split up ██████████ went south looking and I north. At about 1800hrs I found the lynx about five miles to the north. Jennifer Vashon had given me directions over the phone on how to release a lynx unharmed. I used the catch pole with a loose loop and released the Lynx fairly easily. It was vary docile and just watched as I took the trap off. The lynx bounded off unharmed and looked in very good shape. The trap was a legal set. The weather was cold, breezy, and raining lightly. I made contact with Jennifer Vashon that night when I got back to town and advised her of how it went. I think it may have been better for the lynx if the trapper had released it immediately. While we were looking for it ██████████ saw a fisher not too far from the Lynx.

# Call For Service

CFS Number: **WS13-023176**  
Date: **10/27/2013 12:12:43 PM**

=====

CLOSED CALL FOR  
SERVICE=====

----- INCIDENT INFORMATION-----

-----CAD EVENT NUMBER: 130023176 OFFENSE CODE:  
wsre AGENCY: wm (CAD) JURISDICTION: ws (CAD) SECTOR:  
d12 (CAD) GRID: x28 (CAD) CREATED: 20131027 12:13:46 REPORTED:  
20131027 12:12:43 OCCURRENCE START: 20131027 0 OCCURRENCE END: -1 -1  
CLOSED: 20131027 19:46:48 CALL TAKER: lhall, d, hr02  
DISPATCHER: lhall, d, hr02 MODIFIED BY: jstevens, hr03 [RESPONSIBLE  
MEMBER] MEMBER: [11396] johansen, robert UNIT: ws2236 GROUP ID:  
warden [ATTENDED] MEMBER: [10060] milligan, david UNIT: ws2258  
[LOCATION] ADDRESS: lat 46.261 lon -69.152; t7 r11 wels, haymock lakes CITY:  
t7 r11 wels LAT/LON: 4626072,-6915238 LOCATION DETAILS: incident  
[INCIDENT DETAILS]reporting that he has a trapper there about 8 miles north of him that has caught a lynx in  
a trap twice today / 2236 dealt with the same issue a couple weeks ago with this same guy. his name is [REDACTED]  
[REDACTED]

=

SUBJECTS=====

=

VEHICLES=====

BUSINESSES=====

=====  
DISPOSITIONS=====

----- DISPOSITION-----

-----[DETAILS] CODE: 6780 DISPOSITION DATE/TIME:  
20131027 19:46:46 DEVICE: hr03 PERSON ID: jstevens [MISCELLANEOUS]  
CREATED DATE: 0 CREATED TIME: 0 MODIFIED BY OPERATOR:  
jstevens MODIFIED BY WORKSTATION: hr03 LAST MODIFIED: 20131027  
194645=====

=====  
MESSAGES=====

=====  
NCICReplies=====

=====  
ACTIVITY

LISTS=====

-----[hr02, lhall]: 2236//i cannot get ahold of caller it is  
going to voicemail. i am a long ways away from there. let them know andy glidden released on up there the  
other night as well.-----[hr02, lhall]: 2236//i tried to call  
the lynx hotline as well and didn't get anyone-----[hr02,  
lhall]: (second number for [REDACTED] and have to leave a message for him to call back-----  
-----[hr02, lhall]: 2258//i will leave a message for [REDACTED] to call  
me back. technically the trapper has 24 hours to report this-----

# Call For Service

CFS Number: **WS13-023176**

Date: **10/27/2013 12:12:43 PM**

-----[hr03, jstevens]: ws2258//says that it is a lynx. going to contact the od and then go in and release it.-----  
-----[hr03, jstevens]: ws2258//please advise ws2171 that i  
will be going in to release the cat, have bad cell service. will call him to advise the results of cat.-----  
-----[hr03, jstevens]: (advised 2171)-----  
-----[hr04, jrairdon]: (biologist called to advise that [REDACTED] is enroute as well, 2258  
advised)-----[hr03, jstevens]: ws2258//found the cat,  
going to be out of the vehicle for a while attempting to let it go. advise 2171 for me.-----  
-----[hr04, jrairdon]: [REDACTED] advised )-----  
-----[hr04, jrairdon]: 2261//can you advise [REDACTED] that i was able to relase the cat (2261//10-4)-----  
-----[hr04, jrairdon]: (left another message for [REDACTED])-----  
-----[hr03, jstevens]: ws2258//cat has been released.  
already contacted jen the biologist. please contact ws2171 to advise him im off at home and the cat has been  
released.-----[hr03, jstevens]: (advised  
ws2171)=====

== INCIDENT  
ASSOCIATIONS=====

=====



**IDAHO DEPARTMENT OF FISH AND GAME**

600 S Walnut / P.O. Box 25  
Boise, Idaho 83707

C.L. "Butch" Otter / Governor  
Virgil Moore / Director

December 3, 2014

Clifton Horton  
USFWS Headquarters, MS: IA  
5275 Leesburg Pike  
Falls Church, Virginia 22041-3803

Dear Mr. Horton:

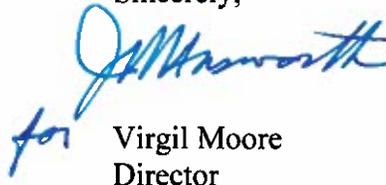
This letter is in response to FWS/DMA/CEP 1-07 regarding river otter and bobcat CITES permit. The Idaho Department of Fish and Game (IDFG) continues to fulfill obligations under the agreement.

Based on our 2013-2014 harvest data received to date, we do not believe that the status for bobcat or river otter has changed significantly in the state of Idaho. Trapping activity has increased over the last few years and we continue monitoring to determine changes in population status. Also, there has been no change to legislation or rule relating to the tagging program for either bobcat or river otter.

We had one lynx captured by a bobcat trapper during 2013. It was captured live and released by IDFG and previously reported to U.S. Fish and Wildlife Service. A second lynx was not reported to IDFG until the trapper report card was logged and we identified it on November 25. It was captured live in a wolf set and released by the trapper in the same area of north Idaho as the previous capture.

Enclosed please find a copy of the latest PR report on furbearers for Idaho. I trust this fulfills the request and obligations set forth in our CITES agreement. If you have any questions, please contact our furbearer coordinator Steve Nadeau at 208-287-2839.

Sincerely,

  
for Virgil Moore  
Director

VM:SN:clc

*Keeping Idaho's Wildlife Heritage*

# 2012

# WOLF

Montana Hunting and Trapping Regulations



Montana Fish,  
Wildlife & Parks



Gray wolf *Canis lupus*. Photo by donaldmjones.com

Apply for General Licenses, Special Licenses, and SuperTags Online: [fwp.mt.gov](http://fwp.mt.gov)

## Regulations Adopted by FWP Commission

These regulations are adopted under the authority granted to the Fish, Wildlife & Parks Commission (FWPC) in MCA 87-1-301 and are valid March 1, 2012 through February 28, 2013. These regulations were adopted by the FWPC on July 12, 2012. Joe Maurier, Director.

State and Federal laws, Title VI of Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972, prohibit discrimination on the basis of race, color, sex, age, religion, national origin, or disability. Anyone believing he or she has been discriminated against (as described above) in any Fish, Wildlife & Parks (FWP) program, activity, or facility may write to FWP Personnel Office, 1420 East Sixth Avenue, PO Box 200701, Helena, MT 59620-0701 or the office of Equal Opportunity, U.S. Department of the Interior, Washington, D.C. 20240.

Regulations may change with legislative changes to Montana statutes.

## What's New & Reminders

### What's New

- Wolf hunting season extended to Feb 28, 2013.
- Wolf trapping season from Dec 15 - Feb 28, 2013.

### Reminders

- A wolf license purchased after August 31 may not be used until five days after the license is issued.
- WMUs may close within 24 hours; a wolf harvest must be reported within 24 hours.

## Licensing – Residency

It is illegal to swear to or to affirm a false statement in order to obtain an original or duplicate resident hunting and/or fishing license OR to assist an unqualified applicant in obtaining a resident license.

### Resident

- To be a legal Montana resident and eligible to purchase any Montana resident fishing, hunting, and trapping licenses, as per MCA 87-2-102, you must:
  - claim Montana as your principal or primary home or place of abode.
  - have been physically living in Montana for at least 180 consecutive days immediately prior to purchasing a resident license.
  - register your vehicle(s) in Montana.
  - be registered to vote in Montana if you're registered to vote.
  - not possess current (or have applied for any) resident hunting, fishing, or trapping privileges in another state or country.
  - file Montana state income tax returns as a resident, if you are required to file.
- Once you have established your residency, you must continue to meet all these requirements and physically reside in Montana as your principal or primary place of abode for not less than 120 days per year (days need not be consecutive).
- To purchase an annual resident conservation license you will be required to show a valid Montana Driver's License (MDL), a valid Montana Identification Card (MIC) or a valid Tribal Identification Card.
- If your MDL or MIC has been issued for less than six months, you may be required to show additional proof of residency. An out-of-state driver's license is NOT an acceptable form of ID for resident license purchases. Contact your local FWP office for specifics.
- A person is NOT considered a resident for the purposes of this section if the person claims residence in any other state or country for any purpose.

## Licensing – General Information and Procedures

- A wolf license is available at all Fish, Wildlife & Parks offices, FWP license providers, and online at [fwp.mt.gov](http://fwp.mt.gov).
- A wolf license purchased after August 31 may not be used until five days after the license is issued.
- The conservation license allows hunters, anglers and trappers access to all legally accessible state school trust lands.

**Interstate Wildlife Violator Compact** – Montana is a member of the Interstate Wildlife Violator Compact. Under the compact, member states recognize suspensions of hunting, fishing or trapping privileges. It is illegal for a violator whose privilege to hunt, fish or trap is suspended to obtain or attempt to obtain a license, tag or permit in a member state. For more information, call 406-444-2452.

## License Chart

The following licenses, for the purpose of wolf hunting are valid March 1, 2012 through the dates listed in these regulations and subject to quota closures.

| LICENSE                        | REQUIREMENTS                                                                                                                                                                                                                                                                                   | COST                               |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Conservation                   | Required Prerequisite                                                                                                                                                                                                                                                                          | \$ 8 Resident                      |
|                                |                                                                                                                                                                                                                                                                                                | \$ 10 Nonresident                  |
| Hunting Access Enhancement Fee | Annual fee charged at the time the hunter purchases his/her first hunting license.                                                                                                                                                                                                             | \$ 2 Resident<br>\$ 10 Nonresident |
| Wolf                           | Required<br>A wolf license purchased after August 31 may not be used until five days after the license is issued.                                                                                                                                                                              | \$ 19 Resident                     |
|                                |                                                                                                                                                                                                                                                                                                | \$350 Nonresident                  |
| General Trapper, Resident      | Available to resident conservation license holders 12 years of age or older. Allows license holder to trap wolves.                                                                                                                                                                             | \$20                               |
| Landowner Trapper, Resident    | Applicant must give legal description of owned or leased land, name, address and resident ALS number. License holder restricted to trapping and hunting only on their owned property and leased lands. <b>Issued only through FWP offices.</b>                                                 | \$1                                |
| Nonresident Trapper            | Available only to nonresident conservation license holders 12 years of age or older, whose state of residence has nonresident trapper licenses available to Montana trappers. <b>Issued only through FWP offices.</b> Valid only for predatory animals and nongame wildlife, including wolves. | \$250                              |
| Bow and Arrow (Archery)        | A bow and arrow license, plus the proper hunting license is required during wolf Archery Only Season.                                                                                                                                                                                          | \$10 Resident<br>\$10 Nonresident  |

## Licensing – Youth Hunting Opportunities

A resident or nonresident youth who is currently 11 but will reach 12 years of age by January 16, 2013, is eligible to hunt wolf with a valid license after August 15, 2012. Proof of hunter education must be presented at the time of purchase.

A youth must be 12 years of age to trap a wolf.

## Hunter Education Requirements

### Hunter Education for Firearm and Archery

- If you were born after January 1, 1985, you are required to show proof of completing a Montana hunter safety and education course (or an approved hunter safety course from any other state or province) prior to applying for or purchasing a hunting license, whether the hunting license is for the rifle or archery season.
- Montana law requires members of the armed forces and their dependents stationed in Montana to present a Montana hunter education certificate or similar certificate from any state or province when purchasing any Montana hunting license.
- Duplicates – Montana certificates of completion for the Montana hunter education and/or bowhunter education courses may be obtained from FWP's website.

## Definitions

**Legal Wolf** – Any male or female wolf, including young-of-the year.

**Wolf Management Unit (WMU)** – Areas that define Montana's wolf hunting and trapping districts as specified under "Wolf Management Unit (WMU) Legal Descriptions".

## Hunter Land Access

**Closed Lands** – State Game Preserves, National Parks, and National Wildlife Refuges are closed to wolf hunting. For additional information on state and federal regulations, contact the local land manager.

**Indian Reservations** – Indian reservations are not open to wolf hunting with a State of Montana license. For questions contact the respective Tribal Government Office.

**Private Land Access** – Montana law requires hunters to have the permission of the landowner, lessee, or their agent before hunting on private property, regardless of whether the land is posted or not. Access courtesy cards and a map directory pamphlet are available at all FWP offices.

### Public Land Access

- Wolf hunting between the ordinary high water marks of streams and rivers is illegal without landowner permission. Landowner permission must be obtained to hunt private lands adjacent to waterways.
- FWP is working cooperatively with other agencies to improve signing of legally accessible public lands wherever possible. A map directory pamphlet is available at all FWP offices.
- Enforcement of Area Closures on Public Land: All federally approved travel plans on public lands in Montana are hereby adopted by the Fish, Wildlife & Parks Commission. Motorized travel in restricted areas in violation of any current travel plan or land use plan is prohibited during the hunting season.

**Railroad Access** – Railroads and railroad right-of-ways are private property and may not be hunted without permission, nor should they be used as access to other lands (private or public) without explicit permission from the railroad. Consult the individual railroad for details.

**State School Trust Land** – A resident Conservation License allows hunters, anglers and trappers access to all legally accessible State school trust lands. However, licensed trappers are required to obtain a free Special Recreational Use License (SRUL) from the Montana Department of Natural Resources and Conservation (DNRC) prior to trapping or snaring on state school trust lands. Trapping may be restricted to those state school trust lands as approved in the SRUL. For further information on how to obtain a SRUL, contact a DNRC office. The deadline to apply for a SRUL is September 30.

**State Wildlife Management Areas (WMA)** – Wildlife Management Areas are generally open to hunting during the fall wolf season. WMAs with big game winter range are closed to public entry, unless otherwise posted, from the day following the end of the general deer-elk season or December 1, whichever is later, to May 15 each year, as posted.

- **Exception:** There are several exceptions to these guidelines. For WMA specific information, please call the Regional office (see back cover for contact numbers) or visit the FWP website at:

<http://fwp.mt.gov/fishAndWildlife/wma/>

## Hunters with a Disability

If you or someone you know has a disability and/or is aging, and is in need of assistive technology (AT) or adaptive equipment to facilitate participation in outdoor recreation, please contact MonTECH at the University of Montana Rural Institute at 700 SW Higgins Ave., Suite 250, Missoula, MT 59803; 877-243-5511.

## Means and Methods of Hunting

As a species in need of management, wolves may only be taken by hunting (firearms or archery) or trapping during the designated seasons.

### Youth

- In order to carry or use a firearm for any reason, a youth under 14 years of age must be accompanied by a person having charge or custody of the child, or be under the supervision of a qualified firearms safety instructor or an adult 18 years of age or older who has been authorized by the youth's parent or guardian, MCA 45-8-344.

### Firearms – General Season

- There is no rifle or handgun caliber limitation for the taking of big game animals.
- Muzzleloaders, shotguns with 0, 00, or slugs, archery equipment, and crossbows are legal.
- The possession of firearms with silencers while afield is illegal.

**Archery Equipment** – Archery Only Season and in archery equipment only areas.

- It is unlawful to use any chemical or explosive device attached to an arrow to aid in the taking of wildlife.
- Lawful Archery Equipment: It is illegal to possess, while hunting big game during any archery only season and in archery equipment only areas, archery equipment that does not meet the following criteria.
- Hunting Bow: A hunting bow for big game shall be a longbow, flatbow, recurve bow, compound bow, or any combination of these designs
- The bow must be a device for launching an arrow, which derives its propulsive energy solely from the bending and recovery of two limbs (includes bows with split limbs).
- The bow must be hand drawn by a single and direct uninterrupted pulling action of the shooter.
- The bow must be hand-held. One hand shall hold the bow and the other hand draw the bowstring. Exception: Physically disabled bowhunters certified by FWP with the Permit To Modify Archery Equipment (PMAE) are exempted from the requirement of holding or shooting the bow with their hands.
- A bow is considered legal if not shorter than 28 inches total length.
- The nominal percent of let-off for hunting bows shall be a maximum of 80 percent.
- Arrow: An arrow is a projectile at least 20 inches in overall length. The length of the arrow is measured from the rearward point of the nock to the tip of the broadhead.
- A broadhead is mounted on the fore end.
- The arrow shall weigh no less than 300 grains with the broadhead attached.
- Arrows must have broadheads with at least two cutting edges. Expandable broadheads are legal as long as when expanded they are at least 7/8 inches at the widest point, and weigh no less than 70 grains.
- The following are not considered a hunting bow or legal archery equipment during the Archery Only Season or in an ArchEquip Only area or hunting district:
  - Crossbow.
  - Any device with a gun-type stock or incorporating any device or mechanism that holds the bowstring at partial or full draw without the shooter's muscle power.
  - Any bow for which a portion of the bow's riser (handle) or any track, trough, channel, or other device that attaches directly to the bow's riser contacts, supports, and/or guides the arrow from a point rearward of the bow's brace height. This is not intended to restrict the use of standard overdraw systems.
  - Electronic or battery-powered devices attached to a hunting bow.
  - A bow sight or arrow which uses artificial light, luminous chemicals such as tritium, or electronics.

### Prohibited Methods of Taking

- It is unlawful to:
  - loan or transfer your license to another person or use a license issued to another person.
  - interfere/hinder with the lawful taking of a game animal.
  - to hunt wolves with dogs.
  - to place any bait for the purpose of attracting wolves to hunt.
  - use artificial scents or lures to hunt wolves.
- It is illegal for anyone to hunt or attempt to hunt any wolf:
  - from any self propelled (that is, motorized) or drawn vehicle. Even if the vehicle is not moving, hunters must be off or out of the vehicle. Holders of the Permit To Hunt From A Vehicle are the exception to this;
  - from, on or across any public highway or the shoulder, berm, barrow pit or right-of-way of any public highway (the entire width between the boundary lines of every publicly maintained way when any part thereof is open to the use of the public for purposes of vehicular travel, MCA 61-1-202) in the State of Montana; or
  - by the aid or with the use of any set gun, jacklight, spotlight or other artificial light, trap, snare, or an electronic tracking device as per Montana law.
- Hunters may not use a motorized vehicle or aircraft to concentrate, drive, rally, stir-up, corral or harass wolves.
- Party hunting is not legal in Montana; each hunter must shoot his/her own animal.

## General Regulations

### It is illegal to

- “Party” hunt. Each hunter must shoot and tag his/her own animal.
- Loan or transfer their license to another person or use a license issued to another person.
- Carry or have physical control over a valid and unused hunting license or permit issued to another person while in any location where the species to be hunted occurs. Exception: a person may carry or have control over a license or permit issued to that person’s spouse or any minor when the spouse or minor is hunting with that person.
- Alter a license or permit for any reason.
- Post state or federal land other than that done by a state or federal land agency.

**Airplane Spotting** – Aircraft may not be used to locate wolves for the purpose of: 1) hunting those animals within the same hunting day after a person has been airborne; or 2) providing information to another person for the purpose of hunting those animals within the same hunting day after being airborne. The **same hunting day** in this context is defined as between the earliest and latest legal hunting hours.

**Check Stations** – All hunters are required to stop as directed at all designated check stations on their way to and from hunting and fishing areas, even if they have no game or fish to be checked.

**Evidence of Sex** – The following are considered lawful evidence of sex: males: testicles; females: vulva or mammarys.

**Hunting Hours** – Authorized hunting hours for the taking of wolves begin one-half hour before sunrise and end one-half hour after sunset each day of the hunting season. See official sunrise-sunset tables in these regulations.

### Hunter Orange

- Firearm Hunters
  - Any person hunting or accompanying a hunter as an outfitter or guide must wear a minimum of 400 square inches of hunter orange (fluorescent) material above the waist, visible at all times. Hunter orange is not required after November 25, 2012.
- Archery Hunters
  - A licensed bowhunter pursuing wolf during the Archery Only Season or in archery only hunting district is not required to meet the hunter orange requirement even if there is a concurrent firearm season in that hunting district or portion of district. However, bowhunters hunting during any portion of the general season (firearm) for wolf must always wear a minimum of 400 square inches of hunter orange (fluorescent) above the waist, visible at all times.

**Illegal Take** – A person convicted of the illegal taking, killing, or possession of a wolf will be fined \$1,000 as per Montana law.

**Inspection of Wildlife** – Wildlife taken must be shown to FWP enforcement for inspection when requested.

### License Possession

- Licenses must be carried on your person at all times while in the field hunting.
- Licenses must be produced if requested by FWP Enforcement personnel.

**Limits and Seasons** – The bag limit is 3 wolves per license year. One wolf can be taken by means of hunting, with a valid wolf license. Wolves may also be taken by trapping, with a valid trapping license, if a person has completed mandatory wolf trapping orientation. Persons could take a combination of up to one wolf via hunting and two wolves via trapping, OR three wolves via trapping (maximum harvest of three wolves per person per license year).

**Motion-Tracking or Camera Devices** – It is illegal for a person to possess or use in the field any electronic or camera device whose purpose is to scout the location of game animals or relay the information on a game animal’s location or movement during any Commission-adopted hunting season.

**Night Vision Equipment** – It is illegal to use night vision equipment or electronically enhanced light gathering optics for locating or hunting game.

**Recorded Animal Sounds** – It is illegal to use any recorded or electrically amplified bird or animal calls or sounds or imitations of bird or animal calls or sounds to assist in the hunting, taking, killing or capturing of wolves.

**Return to Kill Site** – As a condition of hunting in Montana, persons may be required to return to the kill site if requested to do so by a FWP employee.

**Silencers** – The possession of firearms with silencers while big game hunting is illegal.

**Simulated Wildlife** – It is illegal to discharge a firearm or other hunting implement at a simulated wildlife decoy in violation of any state statute or FWP commission rule regulating the hunting of the wildlife being simulated.

### Transport of Big Game

- If you are transporting wolves, game, furbearers or fish between Montana and Canada, whether for commercial or noncommercial purposes, you must complete a USFWS declaration form and inspection. Contact the Wildlife Inspector, U.S. Fish & Wildlife Service, Office of Law Enforcement, Great Falls International Airport, 2800 Terminal Drive, Suite 105, Great Falls, MT 59404 or phone 406-453-5790 or fax 406-453-3657 or download from USFWS website at [www.fws.gov](http://www.fws.gov).
- A CITES permit is required in order to export wolf hides or parts out of the United States. Information on these permits and how to acquire them may be obtained from: Office of Management Authority, USFWS, 4401 N. Fairfax Drive, Room 432, Arlington VA 22203 or telephone 1-800-358-2104 or local USFWS office or agent, or USFWS website at [www.fws.gov](http://www.fws.gov).

### Two-way Communications

- Two-way communication (radios, cell phones, text messages, etc.) may not be used to:
  - hunt wolves. “Hunt” means to “pursue, shoot, wound, kill, chase, lure, possess or capture.” OR
  - avoid game checking stations, FWP enforcement personnel, or to facilitate unlawful activity.
- The rule does not prohibit the possession or use of two-way communication for safety or other legitimate purposes.

**Waste of Game** – wolf is excluded from being considered as “suitable for food” under big game regulations. A person that harvests a wolf and wishes to retain possession of the hide and head must personally present the hide and skull with evidence of sex naturally attached to a designated FWP employee **within ten (10) days** after harvest. The remaining carcass may be taken in possession or be left in the field.

**Youth Hunters** – In order to carry or use a firearm for any reason, a youth under 14 years of age must be accompanied by a person having charge or custody of the child, or be under the supervision of a qualified firearms safety instructor or an adult 18 years of age or older who has been authorized by the youth’s parent or guardian, MCA 45-8-344.

## Wolf Trapping Regulations

**Wolf Trapper Orientation** – A person must attend a wolf trapping orientation class before setting any trap for a wolf. Completion of either the Idaho or Montana wolf trapping orientation will be recognized as meeting this requirement. A certifying letter or validated license will be awarded to those completing the Montana trapping orientation session. This certification must be in possession of any person setting wolf traps and/or harvesting a wolf by trap.

**Trapper License** – A person must hold a valid trapper license along with proof of completion of the orientation class.

**Checking and Placing Traps** – Traps are required to be visually checked at least once every 48 hours. Failure to pick up traps at the end of the trapping season or attending them in a manner that wastes animals constitutes a misdemeanor per Montana law.

**Trap Identification** – Metal identification tags must be fastened to all traps. Metal tags must bear the name and address of the trapper OR a personal identification number, which is the trapper’s date of birth and ALS number. Tags should be attached to the end of the chain or other anchoring material at the end farthest from the portion of the device which holds the animal. Landowners who trap on their own lands and irrigation right-of-way contiguous to their land do not need to tag traps.

**Trapping Equipment Requirements** – Foot-hold traps are legal methods during the wolf trapping season. The inside jaw spread of foothold traps must not exceed nine inches. Conibears or snares may not be used to take wolves.

**Legal Hours** – Trappers will be allowed to dispatch trapped wolves during all hours including night time. A trapper must immediately dispatch any uncollared wolf captured while the trapper holds a valid license authorizing harvest of a wolf or any incidentally captured wolf that is injured.

**Landowner Permission** – Trappers must obtain permission of the landowner, lessee or their agent before trapping on private land.

**Exposed Carcass or Bait** – No trap may be set within 30 feet of an exposed carcass or bait that is visible from above. Exposed carcass or bait is defined as the meat or viscera of a mammal, bird or fish, or any part thereof more than one pound in weight. Bleached bones are excluded.

**Public Land Campground** – On public land, foothold traps are prohibited within 1,000 feet of a designated campground or fishing access site (FAS) that is accessible by highway vehicle.

**Public Land Roads and Trails** – A 150-foot setback is required for foothold traps along open roads and hiking trails on federal and state lands that are designated by administrative signs or numbers.

**Public Land Trailheads** – On public land, foothold traps are prohibited within 1,000 feet of a designated or marked trailhead that is accessible by highway vehicle.

**Occupied Dwellings** – Foothold traps are prohibited within 1,000 feet of an occupied dwelling without written notification of the occupant.

**Incidental Take of Wolves Beyond the Bag Limit** – Trappers may not set traps to capture wolves unless they possess a valid trapping license and have proof of a completed Montana or Idaho wolf trapper orientation. Wolf traps must be removed within 24 hours of capturing an individual trapper's last legally harvested wolf. A trapper must immediately dispatch any uncollared wolf captured that may be legally possessed. A trapper with an unfilled bag limit may release an uninjured collared wolf. If a wolf trapper incidentally catches a wolf beyond the legal limit and the wolf is uninjured, the trapper must contact FWP within 24 hours to potentially have the wolf fitted with a radio collar and released to assist FWP in management efforts. Depending upon circumstances that may include history of livestock depredations in the area and other radio collars already in place, FWP may prescribe these wolves be lethally removed. All incidentally captured wolves that are injured must be dispatched by the trapper immediately. All incidentally captured wolves that are dispatched must be reported within 24 hours to a designated FWP employee or an FWP Regional Office and the skull and pelt must be presented to FWP within 10 days. It is unlawful for any person to retain possession of an incidentally taken wolf as per Montana law.

**Wolves with Radio Collars** – Radio collars are used to monitor wolf activity, assess population status and help determine hunting and trapping opportunities. Though it is legal to do so, FWP encourages hunters and trappers to avoid harvesting radio-collared wolves.

**Non-Target Species** – Incidental captures of non-target wildlife such as protected birds or mammals, that cannot be legally possessed and that are uninjured, shall be released immediately on site and immediately reported to an FWP Regional Office. Trappers that incidentally capture protected animals that cannot be legally possessed and that cannot be released uninjured, must immediately notify a designated Fish, Wildlife & Parks employee or an FWP regional office, to determine disposition and/or collection of the animal.

**Capture of Domestic Dogs** – To improve the understanding of accidental dog captures in traps, trappers must report such captures, excluding a trapper's dog, to an FWP regional office within 48 hours of identifying the capture.

**Disturbing Traps or Trapped Animals** – It is unlawful to destroy, disturb or remove any trap or trapped wildlife belonging to a trapper without permission of the owner of the trap per Montana law.

### Procedures to Follow Upon Harvesting a Wolf

- The combined maximum hunting and trapping bag limit is three wolves per person during the 2012-13 season. One wolf can be taken by means of hunting with a valid wolf license. Trapping is authorized Dec. 15, 2012 - Feb. 28, 2013 with a valid trapping license and upon completion of mandatory wolf-trapping orientation. Persons could take a combination of up to one wolf via hunting and two wolves via trapping—OR three wolves via trapping (maximum harvest of three wolves per person).
- A hunter must cut out the proper month and date of the kill from the appropriate license and attach it to the hide in a secure and visible manner immediately after killing a wolf. This is "validating" the license.

To properly validate a license, locate the appropriate month and date the animal was killed and completely cut away (notch out) the month and the date designations. Removing more than one month or one date designation invalidates the license.

- Evidence of sex must remain naturally intact on the hide.
- Upon discovering a wolf in a trap they have set, trappers are required to immediately dispatch any wolf that will not be released.
- A hunter or trapper that legally harvests a wolf and wishes to retain possession of the hide and skull, or incidentally captures a wolf that must be dispatched, is required to personally present the hide and skull to a designated FWP employee **within ten (10) days** after

harvest for the purpose of:

- inspection and registration of kill.
- verify evidence of sex.
- tagging the hide. The hide tag must thereafter remain attached to the hide until tanned.
- Any hide or skull not presented or registered to FWP personnel within ten (10) days of harvest is subject to confiscation.
- It is unlawful for anyone to possess, ship, transport, sell or purchase any wild wolf harvested in Montana, or part thereof, unless the animal has been tagged as prescribed.
- A hunter or trapper that legally harvests a wolf and does not wish to retain possession of the hide and skull, if allowed by statute, is required to personally present the above harvest information to a designated FWP employee within ten (10) days after harvest. Retrieval of wolf parts must be consistent with relevant statute.
- Wolves are excluded from being considered as "suitable for food". A person that harvests a wolf and wishes to retain possession of the hide and head must personally present the hide and skull with evidence of sex naturally attached to a designated FWP employee **within ten (10) days** after harvest. The remaining carcass may be taken in possession or be left in the field as per Montana law.
- Individuals may possess, transport, sell, or purchase naturally shed antlers, or the antlers with a skull or portion of a skull attached from a game animal that has died from natural causes and that has not been illegally or accidentally killed. Because road-killed animals have not died from natural causes, the carcass or parts of protected or regulated species may not be salvaged or possessed. It is illegal to possess a bighorn sheep head/horn picked up in the wild.
- All successful wolf hunters and trappers must personally report their wolf kill **within 24 hours regardless of their intent to retain possession of the hide and skull** by calling the Wolf Reporting Number at 1 877-FWP-WILD (1-877-397-9453) so that FWP can monitor quota levels. Hunters and trappers are required to provide: name, telephone number, ALS number, species, date of harvest, WMU, specific location (legal description), and sex when reporting a wolf harvest. When reporting a wolf harvest, it is unlawful to subscribe to or make any statement that is materially false.
  - Successful hunters in backcountry areas will be allowed to report wolf harvests within 24 hours of reaching a trailhead except in WMU 316, a backcountry area with a quota, where successful hunters are required to report their harvest within 24 hours of taking a wolf.

### Harvest Limits and Quotas

**Harvest Limits** – The combined maximum hunting and trapping bag limit is three wolves per person during the 2012-13 season. One wolf can be taken by means of hunting with a valid wolf license. Trapping is authorized Dec. 15, 2012 - Feb. 28, 2013 with a valid trapping license and upon completion of mandatory wolf-trapping orientation. Persons could take a combination of up to one wolf via hunting and two wolves via trapping—OR three wolves via trapping (maximum harvest of three wolves per person).

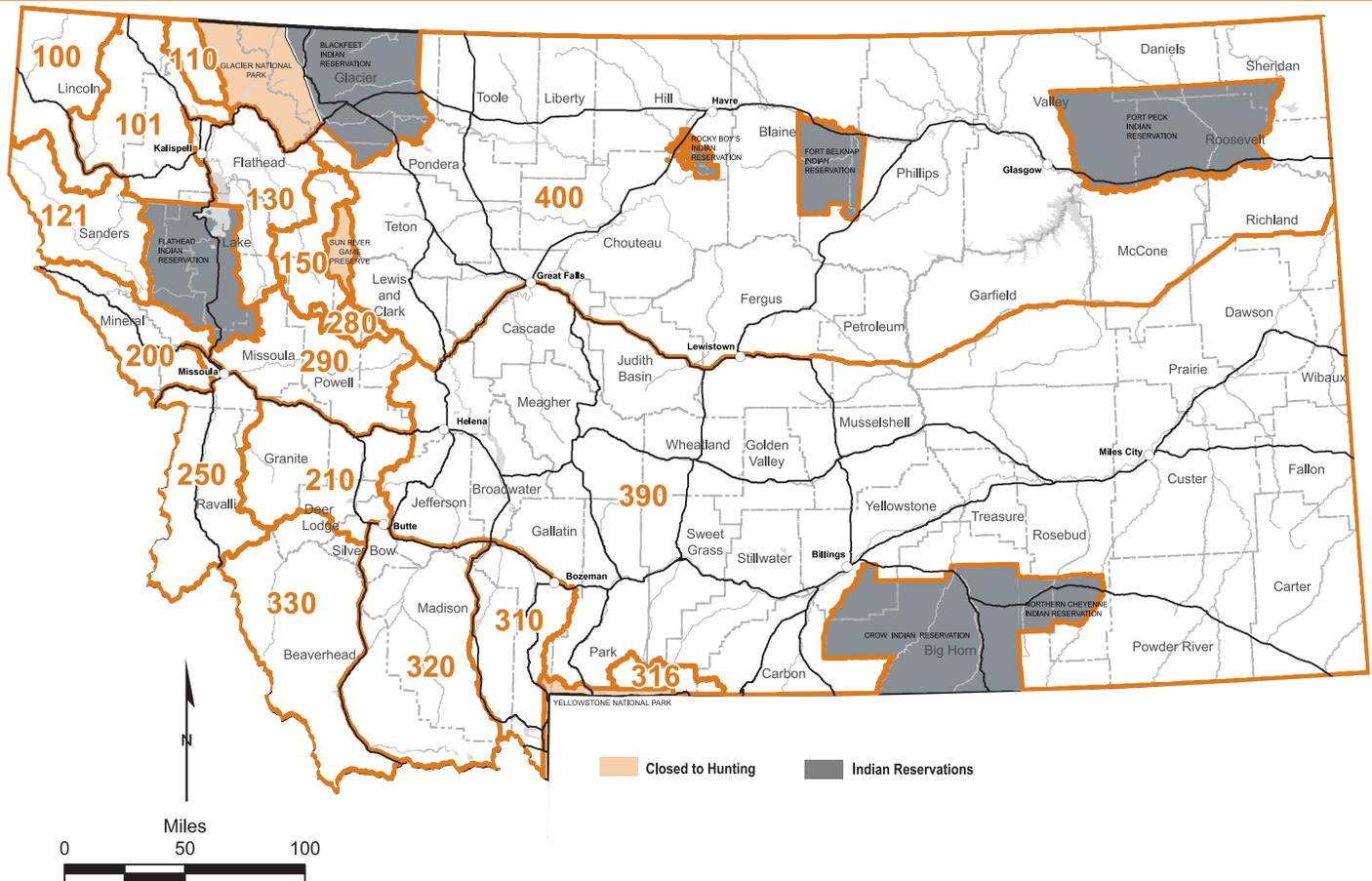
### Harvest Quotas

- Harvest quotas may be established for each WMU.
- When a hunting season quota is reached in a WMU, the hunting season will close upon a 24-hour notice, but no later than February 28, 2013.
- The Fish, Wildlife & Parks Commission has authorized the department to initiate an emergency season closure at any time.

### Harvest Status, Closure and Reporting Information

- Wolf harvest information may be obtained:
  - by calling 1-800-385-7826 for statewide information **or**,
  - by checking the FWP website at [fwp.mt.gov](http://fwp.mt.gov), available 24-hours a day.
  - The toll-free line and FWP website are updated daily by 1 p.m. MST.
- A wolf harvest must be reported within 24 hours by calling 1-877-397-9453. This number is available 24-hours a day. Successful hunters in backcountry areas will be allowed to report wolf harvests within 24 hours of reaching a trailhead except in WMU 316, a backcountry area with a quota, where successful hunters are required to report their harvest within 24 hours of taking a wolf.

## Wolf Management Units



### Wolf Hunting Seasons

The combined maximum hunting and trapping bag limit is three wolves per person during the 2012-13 season. One wolf can be taken by means of hunting with a valid wolf license. Trapping is authorized Dec. 15, 2012 - Feb. 28, 2013 with a valid trapping license and upon completion of mandatory wolf-trapping orientation. Persons could take a combination of up to one wolf via hunting and two wolves via trapping—OR three wolves via trapping (maximum harvest of three wolves per person).

### Reporting requirements are listed under “Procedures to Follow Upon Harvesting a Wolf”.

#### Archery Only Season – September 1 - October 14, 2012

- Resident and nonresident hunters may harvest any wolf in any open WMU statewide during the archery only season.
- A bow and arrow license, plus the proper hunting license, is required to hunt wolf during the archery only season.
- The archery only season for wolf will close:
  - with the end of the archery only season or,
  - when one wolf is taken in a WMU with a harvest quota of less than five wolves (WMUs 110 and 316).

#### General Season – October 15 - February 28, 2013

- Resident and nonresident hunters may harvest any wolf in any open WMU statewide during the general season.
- A wolf license is required to hunt wolf during the general season.

#### Trapping Season – December 15 - February 28, 2013

- Resident and nonresident hunters may trap any wolf in any open WMU statewide during the trapping season.
- A trapping license is required to trap wolf during the trapping season.
- A person must attend a wolf trapping orientation class before setting any trap for a wolf. Completion of either the Idaho or Montana wolf trapping orientation will be recognized as meeting this requirement. A certifying letter or validated license will be awarded to those completing the Montana trapping orientation session. This certification must be in possession of any person setting wolf traps and/or harvesting a wolf by trap.

### Wolf Management Unit (WMU) Regulations

All Wolf Management Units are open during the established seasons except for the specific regulations below. The Fish, Wildlife and Parks Commission has the authority to initiate a closure in any WMU whether or not it is quota based. WMUs 110 and 316 will be closed when the harvest quota is reached.

#### WMU 110 – North Fork Flathead

Harvest Quota: 2 any legal wolf. For quota status call 1-800-385-7826 or check the FWP website at [fwp.mt.gov](http://fwp.mt.gov).

#### General Wolf License.

- Sept 01 - Oct 14 – Archery Only Season.
- Oct 15 - Feb 28, 2013 – General Season.

#### Trapping License.

- Dec 15 - Feb 28 – Trapping Season.

#### WMU 150 – Bob Marshall

#### General Wolf License.

- Sep 01 - Sep 14 – Archery Only Season.
- Sep 15 - Feb 28, 2013 – General Season.

#### Trapping License.

- Dec 15 - Feb 28 – Trapping Season.

#### WMU 280 – North Blackfoot

#### General Wolf License.

- Sep 01 - Sep 14 – Archery Only Season.
- Sep 15 - Feb 28, 2013 – General Season.

#### Trapping License.

- Dec 15 - Feb 28 – Trapping Season.

## WMU 316 – Absaroka

Harvest Quota: 2 any legal wolf. For quota status call 1-800-385-7826 or check the FWP website at [fwp.mt.gov](http://fwp.mt.gov).

### General Wolf License.

- Sep 01 - Sep 14 – Archery Only Season.
- Sep 15 - Feb 28, 2013 – General Season.

### Trapping License.

- Dec 15 - Feb 28 – Trapping Season.

## Wolf Management Unit (WMU) Legal Descriptions

**WMU 100 Purcell:** That portion of Lincoln County lying within the following-described boundary: Beginning where the Montana-Idaho-Canadian border meets at the northwest corner of Montana, then easterly along the Canadian border to the east shore of Lake Koocanusa (Kootenai River), then southerly along said shore to Libby Dam and the east shore of the Kootenai River, then southerly along and westerly along said shore of the Kootenai River to US Highway 2 in Libby, then southerly and easterly along said highway to USFS Road 9991 between Upper and Lower Thompson Lakes, then southerly along said road to USFS Road 6769, then southerly and westerly along said road to the hydrologic divide, T26N, R27W, S30, then first south, then generally west and north along said county line to the Montana-Idaho border, then northerly along said border to where the Montana-Idaho-Canadian border meets, the point of the beginning.

**WMU 101 Salish:** Those portions of Lincoln and Flathead Counties lying within the following-described boundary: Beginning where the east shore of Lake Koocanusa and the Canadian border meet, then easterly along said border to the Whitefish Divide, T37N, R24W, S4, then southerly along said divide to the top of Big Mountain and the head of Canyon Creek, then down Canyon Creek to the North Fork of the Flathead River, then southerly along said river to the Flathead River, then westerly along said river to US Highway 2, then westerly along said highway to 12th Avenue West, Columbia Falls, then northerly to Tamarack Lane, then westerly to East Edgewood Drive and continue westerly to East 2nd Street, Whitefish, then south and westerly to US Highway 93, then west and northerly along said highway to Farm-to-Market Road, then southerly along said road to West Spring Creek Road across US Highway 2 on to Dern Road then east on Whalebone Drive to Foys Lake Road, then southerly along said highway to the Somers Fishing Access Site and the north shore of Flathead Lake, then west and southerly along said shore to the Flathead Indian Reservation Boundary, then west along said boundary to USFS Trail 290, then westerly along said trail to USFS Trail 132, then westerly along said trail to USFS Trail 137 and Shroder Creek Road to the Thompson River County Road, then northerly long said road to US Highway 2, then westerly along said highway to the south shore of the Kootenai River in Libby, then easterly and northerly along said shore to Libby Dam and the east shore of Lake Koocanusa (Kootenai River), then northerly along said shore to the Canadian border, the point of the beginning.

**WMU 110 North Fork:** Those portions of Lincoln and Flathead Counties lying within the following-described boundary: Beginning on the U.S./British Columbia border west of Frozen Lake, proceeding southerly along the Whitefish Divide to the top of Big Mountain, then proceeding easterly from the top of Big Mountain down Canyon Creek to the North Fork of the Flathead River, then northerly up the middle of the North Fork of the Flathead River to the U.S./British Columbia border, then westerly along the U.S./British Columbia border to the Whitefish Divide, the point of beginning.

**WMU 121 Lower Clark Fork North:** Those portions of Lincoln and Flathead Counties lying within the following-described boundary: Beginning where the Sanders-Lincoln County line intersects the Idaho border, then easterly along said county boundary line through Silver Butte Pass, Willow Creek Pass and Davis Peak to USFS Road 6769, T26N, R28W, S12, then northeasterly along said road to US Highway 2, then easterly along said highway to the Thompson River County Road, then southerly along said road to the Shroder Creek Road and USFS Trail 137, then easterly along said road and trail to USFS Trail 132, then southeasterly to USFS Trail 290, then along said trail to the Flathead Indian Reservation Boundary, then southerly along said boundary to the Sanders County line, then westerly along said line to the Clark Fork-Ninemile Divide, then westerly along said divide to USFS Trail 242, then northerly along said trail to the Clark Fork River, then southwestwardly up said river to USFS Trail 1714, then northerly along said trail to USFS Road 7592, then north and westerly along said trail through Compest Peak to the Mineral-Sanders County line, then westerly along said line to the Montana-Idaho border, then northwesterly along said border to the Sanders-Lincoln County line, the point of beginning.

**WMU 130 Flathead-Swan:** Those portions of Flathead, Lake, and Missoula Counties lying within the following-described boundary: Beginning where US Highway 93 and Farm-to-Market Road meet northwest of Whitefish, then southerly along Farm-to-Market Road to West Spring Creek Road across US Highway 2 on to Dern Road then east on Whalebone Drive to Foys Lake Road, then southerly along said highway to the Somers Fishing Access Site and the north shore of Flathead Lake, then easterly and southerly along said shore to the Flathead Indian Reservation boundary, then easterly and southerly along said boundary to the Clearwater River/Swan River Divide, Section 27, T18N, R17W, then northeasterly along said divide (Flathead NF/Lolo NF boundary) to the Swan Divide at Wolverine Peak, then northerly along said divide to Inspiration Point and the Middle Fork Creek/Inspiration Creek Divide, then northeasterly along said creek divide to USFS Trail 218, then easterly along said trail to USFS Trail 226 (Picture Peak Trail), then easterly along said trail to the south side of Sarah Peak, then easterly along the main creek to the South Fork Flathead River and the mouth of Mid Creek/USFS Trail 103, then northeasterly along said trail to USFS Trail 89 at Mid Mtn., then easterly and northerly along said trail to USFS Trail 83 (near Silvertip Cabin), then northwesterly along said trail to USFS Trail 43, then northwesterly along said trail to USFS Trail 327 east of Whitcomb Peak, then northwesterly along said trail to USFS Trail 81, then northerly along said trail to USFS Trail 155, then easterly along said trail to USFS Trail 154, then northeasterly along said trail to USFS Trail 179, then northeasterly and northerly along said trail to the Continental Divide (east of Big Lodge Mountain), then northerly along said divide to the Glacier National Park Boundary (near Marias Pass), then southwestwardly and northwesterly along said boundary to where the Middle Fork and the North Fork of the Flathead River meet to form the Flathead River, then westerly along said river to US Highway 2, then westerly along said highway to 12th Avenue West, Columbia Falls, then northerly to Tamarack Lane, then westerly to East Edgewood Drive and continue westerly to East 2nd Street, Whitefish, then south and westerly to US Highway 93, then west and northerly along said highway to Farm-to-Market Road, the point of beginning.

**WMU 150 Bob Marshall:** Those portions of Flathead, Missoula, Powell and Lewis and Clark Counties lying within the following described boundary: Beginning at Inspiration Point on the Swan Divide and the Middle Fork Creek/Inspiration Creek Divide, then northeasterly along said creek divide to USFS Trail 218, then easterly along said trail to USFS Trail 226 (Picture Peak Trail), then easterly along said trail to USFS Trail 107 near Picture Peak, then northerly along said trail to the south side of Sarah Peak, then easterly along the main creek to the South Fork Flathead River and the mouth of Mid Creek/USFS Trail 103, then northeasterly along said trail to USFS Trail 89 at Mid Mtn., then easterly and northerly along said trail to USFS Trail 83 (near Silvertip Cabin), then northwesterly along said trail to USFS Trail 43, then northwesterly along said trail to USFS Trail 81, then northerly along said trail to USFS Trail 155, then easterly along said trail to USFS Trail 154, then northeasterly along said trail to USFS Trail 179, then northeasterly and northerly along said trail to the Continental Divide (east of Big Lodge Mountain), then southerly along said divide to the Lolo NF/ Flathead NF Boundary at Triple Divide Peak, then westerly along said boundary to the Swan Divide at Wolverine Peak, then northerly along said divide to Inspiration Point, the point of beginning.

**WMU 200 Lower Clark Fork South:** Those portions of Mineral, Sanders and Missoula Counties lying within the following-described boundary: Beginning at the Flathead Indian Reservation Boundary near Evaro, then south along US Highway 93 to its junction with Interstate 90, then northwesterly along said interstate to the first bridge over Clark Fork River west of Frenchtown (second bridge east of Alberton), then easterly along the west and south side of said river to the old Harpers Bridge and County Road 30 (Big Flat Road), then southerly along said road to its junction with the Blue Mountain Road, then south along said road to its junction with US Highway 93, then south along said highway to Lolo, then westerly along US Highway 12 to the Montana-Idaho border (Lolo Pass), then northwest along said border to Lookout Pass, then northerly along said border to the Mineral-Sanders County line, then in an easterly and southerly direction along said county line (C-C Divide) to USFS Trail 404 near Combest Peak, then easterly on said trail to the Miller Creek Loop USFS Road 7592, then easterly along said road to its junction with USFS Trail 415, then easterly on said trail to its junction with USFS Trail 1714, then southerly on said trail to the Clark Fork River, then easterly along said river downstream to Cascade Campground, then south along USFS Trail 242 to Ninemile-Seigel Creek Divide (Sanders-Mineral County Line), then easterly along said divide crossing Seigel Pass to the Flathead Indian Reservation Boundary, then southeasterly along said reservation boundary and divide to Evaro, the point of beginning.

**WMU 210 Bitterroot/Upper Clark Fork:** Those portions of Granite, Powell, Deer Lodge, and Silver Bow Counties lying within the following described boundary: Beginning at the Rock Creek Interchange on Interstate Highway 90 (I-90), then easterly along I-90 to its junction with US Highway 12 at Garrison, then east along said highway to the Continental Divide at MacDonald Pass, then southerly along said divide to Interstate Highway 15 (I-15) at Elk Park Pass, then south along I-15 to its junction with I-90, then west along I-90 to its junction with I-15 (west of Rocker), then south on I-15 to USFS Road 96 (Divide Creek Road), then westerly along said road to Fleecer Ridge, then northerly along said ridge to the Continental Divide at Burnt Mountain, then westerly along said divide to the head of American Creek, then northwesterly down said creek to State Route 274, then northerly along said route to the Continental Divide, then westerly along said divide to the Rock Creek-Bitterroot River Divide at West Pintler Peak, then northerly along said divide to USFS Trail 215, then east along said trail to Eagle Creek Cable Crossing and Rock Creek Road, then north along said road to the Rock Creek Interchange on I-90, the point of beginning.

**WMU 250 West Fork Bitterroot:** Those portions of Ravalli, Missoula and Granite Counties lying within the following described boundary: Beginning at the Montana/Idaho border on US Highway 93 at Lost Trail Pass, then southwesterly, northerly and westerly along said border to US Highway 12 at Lolo Pass, then easterly along said highway to its junction with US Highway 93 at Lolo, then north on said highway to the Blue Mountain Road, then northwesterly along said road to Big Flat Road, then northwesterly along said road to Deep Creek\* then east down said creek to the west shoreline of the Clark Fork River, then northerly and westerly down said shoreline to the first Interstate Highway 90 bridge west of the Ninemile Interchange, then southeasterly along said highway to the Rock Creek Interchange, then south along Rock Creek Road to Eagle Creek Cable Crossing, then west on USFS Trail 215 to the Rock Creek-Bitterroot River Divide, then southerly along said divide to the Continental Divide (at West Pintler Peak), then southwesterly along said divide to the Montana-Idaho border, then westerly long said border to US Highway 93, the point of beginning.

**WMU 280 North Blackfoot:** Those portions of Powell and Lewis and Clark Counties lying within the following-described boundary: Beginning on Monture Creek Trail 27 at its junction with Falls Creek Trail 16, then north along Monture Creek Trail 27 to Center Creek Trail 463, then west along said trail to Center Creek Trail 246, then west along said trail to Youngs Pass and the Flathead-Blackfoot Divide, then northeast along said Divide to Triple Divide Mountain and the Continental Divide, then southeasterly along said Divide to Falls Creek (of the Landers Fork of the Blackfoot River), then southwest along said creek to the Landers Fork, then up said river to Heart Lake Trail 478, then southerly along said trail to its intersection with Trail 481 at Heart Lake, then westerly along Trail 481 to Red Mountain-Ringeye Creek Trail 423, then southwesterly along said trail to Red Mountain, then southwesterly along the Scapegoat Wilderness Boundary (divide between Copper and Beaver Creeks on the south and East Fork of North Fork Blackfoot River on the north) to Arrastra Mountain then northwest along Scapegoat Wilderness Boundary to Windy Pass Trail 484, then southwesterly along said trail to the Bear Creek North Fork Blackfoot Trail 17, then northwesterly along said trail to its intersection with North Fork Blackfoot Trail 32, then southwesterly along said trail to North Fork Blackfoot Trailhead and Lake Creek Trail 61, then northwest along said trail to its junction with Trail 16 near Lake Otatsy, then northwesterly along said trail through Camp Pass to Monture Creek Trail 27, the point of beginning.

**WMU 290 Blackfoot:** Those portions of Granite, Lewis and Clark, Missoula and Powell Counties lying within the following-described boundary: Beginning at Missoula, then northwest along Interstate 90 to US Highway 93, then north on said highway to the Flathead Indian Reservation boundary near Evaro, then northeast and north along said boundary to the Swan-Clearwater Divide, then northeast along said divide, crossing State Route 83 to Wolverine Peak, then southeast along the Flathead-Blackfoot River Divide to USFS Trail 246 (Youngs Pass), then east along said trail to Center Creek Trail 463, then east along said trail to Monture Creek Trail 27, then south on Monture Creek Trail 27 to Falls Creek Trail 16, then easterly along said trail through Camp Pass to Lake Creek Trail 61 near Lake Otatsy, then southeasterly along said trail to the North Fork Blackfoot Trailhead, then north on North Fork Blackfoot Trail 32 to Bear Creek-Northfork Blackfoot Trail 17, then southeasterly along said trail to its intersection with Windy Pass Trail 484, then northeasterly, along said trail to Windy Pass, then southeasterly along the Scapegoat Wilderness Boundary to Arrastra Mountain, then northeasterly along Scapegoat Wilderness Boundary to Red Mountain, then northeasterly on Red Mountain- Ringeye Creek Trail 423 to its junction with Webb Lake Trail 481, then east along said trail to its junction with Heart Lake-Bighorn Creek Trail 478 near Heart Lake, then north along said trail to Landers Fork

River, then southeasterly along said river to Falls Creek (of the Landers Fork River), then northeasterly along said creek to the Continental Divide, the southeast along said divide to Rogers Pass and the Continental Divide, then south along said divide to MacDonald Pass, then west along US Highway 12 to its junction with Interstate 90 at Garrison, then west on said interstate to Missoula, the point of beginning.

**WMU 310 Gallatin-Madison:** Those portions of Gallatin, Madison and Park counties within the following boundary. Beginning at the Montana-Idaho border at Reynolds Pass, then northerly along Highway 87 to the junction with Highway 287, then northerly along Highway 287 to the junction with Interstate 90 at Three Forks, then easterly along Interstate 90 to the Meadow Creek Road, then southerly along the Meadow Creek Road to the Goose Creek Road, then southerly along the Goose Creek Road to the Gallatin- Yellowstone Divide near the Old Cooper Reservoir, then south along the Gallatin-Yellowstone Divide to the Yellowstone National Park boundary, then westerly and southerly along the Yellowstone National Park boundary to the Montana-Idaho border, then northwesterly along the Montana-Idaho border to Reynolds Pass, the point of beginning.

**WMU 316 Absaroka:** WMU 316: Those portions of Carbon, Sweet Grass and Park Counties lying within the following-described boundary: Beginning at the junction of the Montana-Wyoming border and the Custer-Gallatin National Forest boundary southeast of Albino Lake, then northerly and westerly along said boundary to Granite Mountain, then north one-half mile to the Stillwater County Line, then west along said county line to the Custer-Gallatin National Forest Boundary near Timberline Mountain, then northerly along said boundary to the Slough Creek-Boulder River Divide near Columbine Pass, then southwesterly along the Boulder River-Slough Creek Divide and northwesterly along the Boulder River-Buffalo Fork Divide and the Hellroaring Creek-Boulder River Divide to the Hellroaring-Mill Creeks Divide near Crow Mountain, then southwesterly along the Mill-Hellroaring Creeks Divide to the Bear-Hellroaring Creeks Divide to Ash Mountain, then southerly along the Crevice-Hellroaring Creeks Divide to the Crevice-Cottonwood Creeks Divide, then southerly along the Crevice-Cottonwood Creeks Divide to the Yellowstone National Park Boundary, then easterly and southerly along said boundary to the Montana-Wyoming border, then easterly along said border to the Custer-Gallatin National Forest boundary southeast of Albino Lake, the point of beginning. WMU 316 encompasses deer/elk hunting district 316.

**WMU 320 Highlands-Tobacco Roots-Gravelly-Snowcrest:** Those portions of Beaverhead, Broadwater, Gallatin, Jefferson, Madison and Silver Bow counties within the following boundary. Beginning at the Montana-Idaho border at Monida Pass, then northerly along Interstate 15 to the junction with Interstate 90 at Rocker, then easterly along Interstate 90 to the junction with Highway 287 at Three Forks, then southerly along Highway 287 to the junction with Highway 87, then southerly along Highway 87 to the Montana-Idaho border at Reynolds Pass, then westerly along the Montana-Idaho border to Monida Pass, the point of beginning.

**WMU 330 Big Hole/Tendoy:** Those portions of Silver Bow, Beaverhead, and Deer Lodge Counties lying within the following described boundary: Beginning at the junction of USFS Road 96 (Divide Creek Road) and Interstate Highway 15 (I-15, south of Rocker), then southerly along said highway to the Montana/Idaho border (Continental Divide), then west and northerly along said border/divide to its junction with the boundary between Ravalli and Beaverhead counties (in Sec 3, T2S, R19W), then continuing northeasterly along said divide to State Route 274, then southerly along said route to American Creek, then southeasterly up said creek to its head at the Continental Divide, then easterly along said divide to Fleecer Ridge at Burnt Mountain, then southerly along said ridge to USFS Road 96, then easterly along said road to its junction with I-15, the point of beginning.

**WMU 390 South Central Montana:** Those portions of Silverbow, Jefferson, Lewis & Clark, Cascade, Meagher, Gallatin, Park, Judith Basin, Wheatland, Sweet Grass, Stillwater, Carbon, Golden Valley, Fergus, Petroleum, Musselshell, Yellowstone, Big Horn, Treasure, Rosebud, Garfield, McCone, Prairie, Custer, Powder River, Carter, Fallon, Wibaux, Dawson and Richland Counties within the following boundary. Beginning at the junction of Interstate 90 and Interstate 15 at Butte, then northerly along Interstate 15 to the Continental Divide at Elk Park Pass, then northerly along the Continental Divide to the North Fork of Lyons Creek (northwest of Flesher Pass), then southeasterly down said creek to Interstate 15, then northeasterly along said interstate to the junction with Highway 200, then easterly along said highway to the Montana-North Dakota border, then southerly along said border to the Montana-South Dakota border, then southerly along said border to the Montana-Wyoming border, then westerly along said border to the Custer-Gallatin National Forest boundary southeast of Albino Lake, then northerly and westerly along said boundary to Granite Mountain, then north one-half mile to the Stillwater County Line, then west along said county line to the Custer-Gallatin National Forest Boundary near Timberline Mountain, then northerly along said

boundary to the Slough Creek-Boulder River Divide near Columbine Pass, then southwesterly along the Boulder River-Slough Creek Divide and northwesterly along the Boulder River-Buffalo Fork Divide and the Hellroaring Creek-Boulder River Divide to the Hellroaring-Mill Creeks Divide near Crow Mountain, then southwesterly along the Mill-Hellroaring Creeks Divide to the Bear-Hellroaring Creeks Divide to Ash Mountain, then southerly along the Crevice-Hellroaring Creeks Divide to the Crevice-Cottonwood Creeks Divide, then southerly along the Crevice-Cottonwood Creeks Divide to the Yellowstone National Park Boundary, then westerly along said boundary to the Yellowstone-Gallatin River Divide, then northerly along said divide to the Goose Creek Road, then northwesterly along said road to Meadow Creek Road (west of Livingston), then westerly along said road to Interstate 90, then westerly along said interstate to Butte, the point of beginning. WMU 390 encompasses deer/elk hunting districts 309 (north of I-90), 312,313, 314, 315, 317, 318, 335, 339, 343, 350, 370, 380, 388, 390, 391,392, and 393 AND all of Region 5, all of Region 7 south of US Hwy 200 and a portion of Region 4 south of US Hwy 200 and east of I-15.

WMU 390 encompasses deer/elk hunting districts 309 (north of I-90), 312, 313, 314, 315, 316, 317, 318, 335, 339, 343, 350, 370, 380, 388, 390, 391, 392, and 393 AND all of Region 5, all of Region 7 south of US Hwy 200 and a portion of Region 4 south of US Hwy 200 and east of I-15.

**WMU 400 North Central Montana:** Those portions of Glacier, Pondera, Teton, Lewis and Clark, Cascade, Chouteau, Judith Basin, Toole, Liberty, Hill, Blaine, Fergus, Petroleum, Phillips, Valley, Garfield, McCone, Richland, Roosevelt, Sheridan, Daniels and Dawson counties within the following described boundary: beginning at the intersection of Interstate Highway 15 and State Highway 200 near Great Falls, then easterly along Highway 200 to the Montana - North Dakota border, then northerly along said border to the Montana - Canada border, then westerly along the Montana - Canada border to its intersection with the continental divide in Glacier National Park, then southerly along said continental divide, through Rogers Pass, to the North Fork of Lyons Creek, then southeasterly down Lyons Creek to Interstate Highway 15, then northerly along Interstate Highway 15 to its intersection with State Highway 200 near Great Falls, the point of beginning.

### Reminders for Wolf Hunters

- If you buy your wolf hunting license after the season has already opened, the license is not valid for five (5) days.
- Report your harvest within 24 hours by calling the Wolf Reporting Hotline at: 1-877-FWP-WILD (1-877-397-9453).
- You can harvest a radio-collared wolf, but the collar must be returned to FWP. Please don't cut the collar belting.
- Report wolves and wolf sign to FWP to help monitor and manage the wolf population. Information provided by hunters and other outdoor recreationists helps FWP get more accurate population counts. This benefits hunters directly by helping FWP make better decisions about wolf management. It also benefits hunters by helping FWP work more effectively with private agricultural landowners who provide open space and wildlife habitat, yet may lose livestock to wolves. If you see injured or dead livestock that you think could be due to wolves, contact FWP or the livestock owner. Report wolves and wolf sign:
  - online at: <http://fwp.mt.gov/wolf> – look for “Report a Wolf”,
  - call the nearest FWP office, or
  - mail a Wolf Observation Post Card.
- Montana law allows a person to kill a wolf that is seen in the act of attacking, killing, or threatening to kill a person, seen in the act of attacking, killing, or threatening to kill livestock (cattle, sheep, llama, horses, mules or herding or guard animals), or seen in the act of attacking or killing a domestic dog not used for herding or guarding livestock. FWP must be notified within 72 hours of take or attempt to take under these circumstances.

### Some Things You Should Know

#### Hunting Tips

- Know your target. A full sized adult wolf is about 2.5 feet tall, 5-6 feet long, and 70-120 pounds. Adult males are heavier and usually a little larger than adult females. By early fall, a young wolf is almost as tall as an adult, but weighs 10-30 pounds less and appears lanky.
- Compared to a coyote, a wolf is bulky, massive and long-legged, with a broad snout, round ears and fur ranging from gray, black or tan to white.
- Experts suggest you use a center fire rifle suitable for big game.
- Wolves may travel on roads and trails; look for tracks and scat.
- Wolves communicate with each other via howls and other sounds. If you howl at the right time, you might draw in a wolf.
- Alert deer and elk may signal a wolf nearby. Look for movement and pay attention.

### Common Sense Precautions When Field-Dressing or Skinning Big Game

- To minimize risk of disease or parasite transmission to humans, follow these proper ways to handle wild meat, carcasses and hides:
- Wear rubber (latex) gloves when field dressing or skinning game.
- Minimize contact with animal fluids, brain, spinal tissues and feces.
- Wash hands and instruments thoroughly after field dressing or processing.
- Cook all meat until well done before consuming.
- To minimize risk of disease or parasite transmission to your domestic dog, prevent consumption of big game viscera.

### Wolf Behavior: Tips and What to Expect

- After the shot, follow the wolf to retrieve and tag it as you would any other big game animal. Wolves aren't known to defend a wounded or harvested wolf pack member. Other wolves may howl, bark, observe, or linger briefly, but will leave the area.
- Wolves are not known to defend their own kills from humans. If you find a wolf-kill be aware of any bear sign and stay vigilant.
- Though curious, wolves rarely pose a threat to human safety. Risk factors are primarily habituation (loss of fear), food conditioning, or domestic dogs. Keep a clean camp as you would if hunting in bear country by securing all food and game meat from wolves and other scavengers. Pack out all garbage so the area will be safe for you and other recreationists in the future.

### Wolf Parasites

#### Mange

- Some wolves have mange – a skin parasite that results in the loss of fur on the wolf. In mild cases, the wolf can lose hair on its tail, lower belly, or the lower parts of its legs. In severe cases, a wolf can lose hair across a large part of its body. Hunters can visually scan a wolf to see if it shows signs of hair loss. If it does, you may choose to not take the animal, as its fur will likely not be in prime condition for tanning. If you shoot a wolf that does show signs of mange, tag the animal and report the kill to FWP. You may be issued another wolf license.

#### Tape Worm

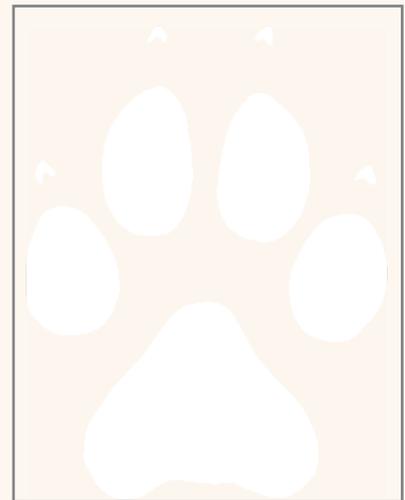
- Wolves commonly carry tapeworm in their intestinal tract called *Echinococcus granulosus*. There is some risk of humans becoming infected with this parasite.
- Hunters should wear gloves when field dressing a wolf, coyote, or fox carcass, and wash hands and forearms thoroughly, since they may have come into contact with contaminated feces or fur. When skinning any animal, use common sense precautions: wear rubber (latex) gloves, minimize contact with animal fluids, brain and spinal tissues, and wash hands and instruments thoroughly after field dressing. Carry and use hand sanitizer.
- Several basic precautions will minimize the risk of human infection with *Echinococcus*. Dog owners should not allow dogs to consume carcasses of wild or domestic ungulates. If your dog does have access to carcasses, talk to your veterinarian about an appropriate deworming strategy. Always wash your hands after handling a dog that has access to ungulate carcasses. When enjoying outdoor recreation, do not touch or disturb wolf, coyote, or fox scat.
- The general public is unlikely to be infected with *Echinococcus*. To become infected with *Echinococcus*, a human must ingest parasite eggs, which are passed with the feces of an infected wolf, coyote, fox or domestic dog. Eggs could be ingested while consuming vegetation or drinking water that has been contaminated with infected feces. Humans may also become infected after handling contaminated canine scat or fur, and then transferring eggs to the mouth by touching the face or eating before adequate handwashing. *Echinococcus* infection in humans can lead to development of cysts in organs such as the lungs, liver, or brain, just as it does with other intermediate hosts. Cysts may develop over prolonged periods of time (10-15 years) before any clinical signs are evident. Treatment may involve surgical removal of cysts and treatment with anthelmintic medications. Contact the Montana Department of Health and Human Services for more information.

To report a violation  
anywhere in the state  
call 1-800-TIP-MONT,  
1-800-847-6668.

**Actual size wolf track**  
(typical adult front foot)



**Actual size coyote track**  
(typical adult front foot)



**WOLF**



- 2.5 feet tall
- 5-6 feet long
- 70-120 pounds
- Broad snout
- Round ears
- Color light gray to black
- Long, low howl
- Track 4.5 inches wide, 5 to 5.5 inches long
- Claws evident

**COYOTE**



- 1.5 feet tall
- 4 feet long
- 30-40 pounds
- Narrow snout
- Pointed ears
- Color light gray to brown
- Track 2.5 inches wide, 2 to 2.5 inches long
- Claws evident

## 2012 Sunrise-Sunset Tables For Determining Hunting Hours

These tables, including adjustments for daylight savings time, are the official sunrise-sunset tables adopted by the Montana Fish, Wildlife & Parks Commission for wolf hunting in Montana. Authorized hunting hours for the taking of wolf begin one-half hour before sunrise and end one-half hour after sunset each day of the hunting season. **(Do not utilize from other sources).**



### ZONE 1

**INCLUDES:** Flathead, Granite, Lake, Lincoln, Mineral, Missoula, Ravalli and Sanders Counties

| Day | Sept      |          | Oct       |          | Nov       |          | Dec       |          | Jan       |          | Feb       |          |
|-----|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|
|     | Rise A.M. | Set P.M. |
| 01  | 6:56      | 8:14     | 7:36      | 7:15     | 8:19      | 6:19     | 8:01      | 4:49     | 8:21      | 4:59     | 8:00      | 5:40     |
| 02  | 6:58      | 8:12     | 7:37      | 7:13     | 8:21      | 6:18     | 8:02      | 4:49     | 8:21      | 5:00     | 7:59      | 5:41     |
| 03  | 6:59      | 8:10     | 7:38      | 7:11     | 8:22      | 6:16     | 8:03      | 4:48     | 8:21      | 5:01     | 7:57      | 5:43     |
| 04  | 7:00      | 8:08     | 7:40      | 7:09     | 7:24      | 5:15     | 8:05      | 4:48     | 8:21      | 5:02     | 7:56      | 5:44     |
| 05  | 7:02      | 8:06     | 7:41      | 7:07     | 7:25      | 5:13     | 8:06      | 4:48     | 8:21      | 5:03     | 7:55      | 5:46     |
| 06  | 7:03      | 8:04     | 7:42      | 7:05     | 7:27      | 5:12     | 8:07      | 4:48     | 8:21      | 5:04     | 7:53      | 5:47     |
| 07  | 7:04      | 8:03     | 7:44      | 7:03     | 7:28      | 5:11     | 8:08      | 4:48     | 8:20      | 5:05     | 7:52      | 5:49     |
| 08  | 7:05      | 8:01     | 7:45      | 7:01     | 7:30      | 5:09     | 8:09      | 4:47     | 8:20      | 5:06     | 7:51      | 5:51     |
| 09  | 7:07      | 7:59     | 7:46      | 6:59     | 7:31      | 5:08     | 8:10      | 4:47     | 8:20      | 5:07     | 7:49      | 5:52     |
| 10  | 7:08      | 7:57     | 7:48      | 6:57     | 7:33      | 5:07     | 8:11      | 4:47     | 8:19      | 5:08     | 7:48      | 5:54     |
| 11  | 7:09      | 7:55     | 7:49      | 6:55     | 7:34      | 5:06     | 8:12      | 4:47     | 8:19      | 5:10     | 7:46      | 5:55     |
| 12  | 7:11      | 7:53     | 7:51      | 6:53     | 7:35      | 5:05     | 8:13      | 4:47     | 8:18      | 5:11     | 7:44      | 5:57     |
| 13  | 7:12      | 7:51     | 7:52      | 6:52     | 7:37      | 5:03     | 8:13      | 4:48     | 8:18      | 5:12     | 7:43      | 5:58     |
| 14  | 7:13      | 7:49     | 7:53      | 6:50     | 7:38      | 5:02     | 8:14      | 4:48     | 8:17      | 5:14     | 7:41      | 6:00     |
| 15  | 7:14      | 7:47     | 7:55      | 6:48     | 7:40      | 5:01     | 8:15      | 4:48     | 8:17      | 5:15     | 7:40      | 6:01     |
| 16  | 7:16      | 7:45     | 7:56      | 6:46     | 7:41      | 5:00     | 8:16      | 4:48     | 8:16      | 5:16     | 7:38      | 6:03     |
| 17  | 7:17      | 7:43     | 7:58      | 6:44     | 7:43      | 4:59     | 8:16      | 4:49     | 8:15      | 5:18     | 7:36      | 6:04     |
| 18  | 7:18      | 7:41     | 7:59      | 6:42     | 7:44      | 4:58     | 8:17      | 4:49     | 8:14      | 5:19     | 7:35      | 6:06     |
| 19  | 7:20      | 7:39     | 8:00      | 6:41     | 7:46      | 4:57     | 8:18      | 4:49     | 8:14      | 5:20     | 7:33      | 6:07     |
| 20  | 7:21      | 7:37     | 8:02      | 6:39     | 7:47      | 4:56     | 8:18      | 4:50     | 8:13      | 5:22     | 7:31      | 6:09     |
| 21  | 7:22      | 7:35     | 8:03      | 6:37     | 7:48      | 4:55     | 8:19      | 4:50     | 8:12      | 5:23     | 7:30      | 6:10     |
| 22  | 7:24      | 7:32     | 8:05      | 6:35     | 7:50      | 4:55     | 8:19      | 4:51     | 8:11      | 5:25     | 7:28      | 6:12     |
| 23  | 7:25      | 7:30     | 8:06      | 6:34     | 7:51      | 4:54     | 8:20      | 4:51     | 8:10      | 5:26     | 7:26      | 6:13     |
| 24  | 7:26      | 7:28     | 8:08      | 6:32     | 7:52      | 4:53     | 8:20      | 4:52     | 8:09      | 5:28     | 7:24      | 6:15     |
| 25  | 7:28      | 7:26     | 8:09      | 6:30     | 7:54      | 4:52     | 8:20      | 4:53     | 8:08      | 5:29     | 7:22      | 6:16     |
| 26  | 7:29      | 7:24     | 8:10      | 6:29     | 7:55      | 4:52     | 8:21      | 4:53     | 8:07      | 5:31     | 7:21      | 6:18     |
| 27  | 7:30      | 7:22     | 8:12      | 6:27     | 7:56      | 4:51     | 8:21      | 4:54     | 8:06      | 5:32     | 7:19      | 6:19     |
| 28  | 7:32      | 7:20     | 8:13      | 6:25     | 7:58      | 4:51     | 8:21      | 4:55     | 8:05      | 5:34     | 7:17      | 6:21     |
| 29  | 7:33      | 7:18     | 8:15      | 6:24     | 7:59      | 4:50     | 8:21      | 4:56     | 8:04      | 5:35     |           |          |
| 30  | 7:34      | 7:16     | 8:16      | 6:22     | 8:00      | 4:50     | 8:21      | 4:57     | 8:03      | 5:37     |           |          |
| 31  |           |          | 8:18      | 6:21     |           |          | 8:21      | 4:58     | 8:01      | 5:38     |           |          |

### ZONE 2

**INCLUDES:** Beaverhead, Broadwater, Cascade, Choteau, Deer Lodge, Gallatin, Glacier, Hill, Jefferson, Lewis & Clark, Liberty, Madison, Meagher, Park, Pondera, Powell, Silver Bow, Teton and Toole Counties.

| Day | Sept      |          | Oct       |          | Nov       |          | Dec       |          | Jan       |          | Feb       |          |
|-----|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|
|     | Rise A.M. | Set P.M. |
| 01  | 6:49      | 8:06     | 7:28      | 7:07     | 8:11      | 6:12     | 7:52      | 4:42     | 8:12      | 4:52     | 7:52      | 5:33     |
| 02  | 6:50      | 8:04     | 7:29      | 7:05     | 8:12      | 6:11     | 7:53      | 4:42     | 8:12      | 4:53     | 7:50      | 5:34     |
| 03  | 6:51      | 8:02     | 7:30      | 7:03     | 8:14      | 6:09     | 7:55      | 4:42     | 8:12      | 4:54     | 7:49      | 5:36     |
| 04  | 6:53      | 8:00     | 7:31      | 7:01     | 7:15      | 5:08     | 7:56      | 4:41     | 8:12      | 4:55     | 7:48      | 5:37     |
| 05  | 6:54      | 7:58     | 7:33      | 6:59     | 7:17      | 5:06     | 7:57      | 4:41     | 8:12      | 4:56     | 7:46      | 5:39     |
| 06  | 6:55      | 7:56     | 7:34      | 6:57     | 7:18      | 5:05     | 7:58      | 4:41     | 8:12      | 4:57     | 7:45      | 5:40     |
| 07  | 6:56      | 7:54     | 7:36      | 6:55     | 7:20      | 5:04     | 7:59      | 4:41     | 8:11      | 4:58     | 7:43      | 5:42     |
| 08  | 6:58      | 7:52     | 7:37      | 6:53     | 7:21      | 5:02     | 8:00      | 4:41     | 8:11      | 4:59     | 7:42      | 5:43     |
| 09  | 6:59      | 7:50     | 7:38      | 6:51     | 7:22      | 5:01     | 8:01      | 4:41     | 8:11      | 5:00     | 7:41      | 5:45     |
| 10  | 7:00      | 7:49     | 7:40      | 6:50     | 7:24      | 5:00     | 8:02      | 4:41     | 8:10      | 5:02     | 7:39      | 5:46     |
| 11  | 7:02      | 7:47     | 7:41      | 6:48     | 7:25      | 4:59     | 8:03      | 4:41     | 8:10      | 5:03     | 7:38      | 5:48     |
| 12  | 7:03      | 7:45     | 7:42      | 6:46     | 7:27      | 4:57     | 8:04      | 4:41     | 8:10      | 5:04     | 7:36      | 5:49     |
| 13  | 7:04      | 7:43     | 7:44      | 6:44     | 7:28      | 4:56     | 8:04      | 4:41     | 8:09      | 5:05     | 7:34      | 5:51     |
| 14  | 7:05      | 7:41     | 7:45      | 6:42     | 7:30      | 4:55     | 8:05      | 4:41     | 8:08      | 5:07     | 7:33      | 5:52     |
| 15  | 7:07      | 7:39     | 7:47      | 6:40     | 7:31      | 4:54     | 8:06      | 4:41     | 8:08      | 5:08     | 7:31      | 5:54     |
| 16  | 7:08      | 7:37     | 7:48      | 6:38     | 7:33      | 4:53     | 8:07      | 4:41     | 8:07      | 5:09     | 7:30      | 5:55     |
| 17  | 7:09      | 7:35     | 7:49      | 6:37     | 7:34      | 4:52     | 8:07      | 4:42     | 8:06      | 5:11     | 7:28      | 5:57     |
| 18  | 7:11      | 7:33     | 7:51      | 6:35     | 7:35      | 4:51     | 8:08      | 4:42     | 8:06      | 5:12     | 7:26      | 5:58     |
| 19  | 7:12      | 7:31     | 7:52      | 6:33     | 7:37      | 4:50     | 8:09      | 4:43     | 8:05      | 5:13     | 7:25      | 6:00     |
| 20  | 7:13      | 7:29     | 7:54      | 6:31     | 7:38      | 4:49     | 8:09      | 4:43     | 8:04      | 5:15     | 7:23      | 6:01     |
| 21  | 7:14      | 7:27     | 7:55      | 6:30     | 7:40      | 4:48     | 8:10      | 4:44     | 8:03      | 5:16     | 7:21      | 6:03     |
| 22  | 7:16      | 7:25     | 7:56      | 6:28     | 7:41      | 4:48     | 8:10      | 4:44     | 8:02      | 5:18     | 7:19      | 6:04     |
| 23  | 7:17      | 7:23     | 7:58      | 6:26     | 7:42      | 4:47     | 8:11      | 4:45     | 8:01      | 5:19     | 7:18      | 6:06     |
| 24  | 7:18      | 7:21     | 7:59      | 6:25     | 7:44      | 4:46     | 8:11      | 4:45     | 8:00      | 5:21     | 7:16      | 6:07     |
| 25  | 7:20      | 7:19     | 8:01      | 6:23     | 7:45      | 4:45     | 8:11      | 4:46     | 7:59      | 5:22     | 7:14      | 6:09     |
| 26  | 7:21      | 7:17     | 8:02      | 6:21     | 7:46      | 4:45     | 8:12      | 4:47     | 7:58      | 5:24     | 7:12      | 6:10     |
| 27  | 7:22      | 7:15     | 8:04      | 6:20     | 7:47      | 4:44     | 8:12      | 4:47     | 7:57      | 5:25     | 7:11      | 6:12     |
| 28  | 7:24      | 7:13     | 8:05      | 6:18     | 7:49      | 4:44     | 8:12      | 4:48     | 7:56      | 5:27     | 7:09      | 6:13     |
| 29  | 7:25      | 7:11     | 8:06      | 6:17     | 7:50      | 4:43     | 8:12      | 4:49     | 7:55      | 5:28     |           |          |
| 30  | 7:26      | 7:09     | 8:08      | 6:15     | 7:51      | 4:43     | 8:12      | 4:50     | 7:54      | 5:30     |           |          |
| 31  |           |          | 8:09      | 6:13     |           |          | 8:12      | 4:51     | 7:53      | 5:31     |           |          |

### ZONE 3

**INCLUDES:** Big Horn, Blaine, Carbon, Fergus, Golden Valley, Judith Basin, Musselshell, Petroleum, Phillips, Stillwater, Sweet Grass, Wheatland and Yellowstone Counties

| Day | Sept      |          | Oct       |          | Nov       |          | Dec       |          | Jan       |          | Feb       |          |
|-----|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|
|     | Rise A.M. | Set P.M. |
| 01  | 6:38      | 7:56     | 7:17      | 6:56     | 8:01      | 6:01     | 7:44      | 4:30     | 8:04      | 4:39     | 7:42      | 5:21     |
| 02  | 6:39      | 7:54     | 7:19      | 6:54     | 8:03      | 5:59     | 7:45      | 4:30     | 8:04      | 4:40     | 7:41      | 5:22     |
| 03  | 6:40      | 7:52     | 7:20      | 6:52     | 8:04      | 5:58     | 7:46      | 4:29     | 8:04      | 4:41     | 7:40      | 5:24     |
| 04  | 6:42      | 7:50     | 7:21      | 6:50     | 7:06      | 4:56     | 7:47      | 4:29     | 8:04      | 4:43     | 7:38      | 5:26     |
| 05  | 6:43      | 7:48     | 7:23      | 6:48     | 7:07      | 4:55     | 7:48      | 4:29     | 8:03      | 4:44     | 7:37      | 5:27     |
| 06  | 6:44      | 7:46     | 7:24      | 6:46     | 7:09      | 4:53     | 7:49      | 4:29     | 8:03      | 4:45     | 7:36      | 5:29     |
| 07  | 6:46      | 7:44     | 7:25      | 6:44     | 7:10      | 4:52     | 7:50      | 4:28     | 8:03      | 4:46     | 7:34      | 5:30     |
| 08  | 6:47      | 7:42     | 7:27      | 6:43     | 7:12      | 4:51     | 7:51      | 4:28     | 8:03      | 4:47     | 7:33      | 5:32     |
| 09  | 6:48      | 7:40     | 7:28      | 6:41     | 7:13      | 4:49     | 7:52      | 4:28     | 8:02      | 4:48     | 7:31      | 5:33     |
| 10  | 6:50      | 7:38     | 7:30      | 6:39     | 7:15      | 4:48     | 7:53      | 4:28     | 8:02      | 4:50     | 7:30      | 5:35     |
| 11  | 6:51      | 7:36     | 7:31      | 6:37     | 7:16      | 4:47     | 7:54      | 4:28     | 8:01      | 4:51     | 7:28      | 5:36     |
| 12  | 6:52      | 7:34     | 7:32      | 6:35     | 7:18      | 4:46     | 7:55      | 4:28     | 8:01      | 4:52     | 7:27      | 5:38     |
| 13  | 6:53      | 7:32     | 7:34      | 6:33     | 7:19      | 4:45     | 7:56      | 4:29     | 8:00      | 4:53     | 7:25      | 5:40     |
| 14  | 6:55      | 7:30     | 7:35      | 6:31     | 7:21      | 4:43     | 7:57      | 4:29     | 8:00      | 4:55     | 7:23      | 5:41     |
| 15  | 6:56      | 7:28     | 7:37      | 6:29     | 7:22      | 4:42     | 7:57      | 4:29     | 7:59      | 4:56     | 7:22      | 5:43     |
| 16  | 6:57      | 7:26     | 7:38      | 6:27     | 7:24      | 4:41     | 7:58      | 4:29     | 7:58      | 4:57     | 7:20      | 5:44     |
| 17  | 6:59      | 7:24     | 7:40      | 6:26     | 7:25      | 4:40     | 7:59      | 4:29     | 7:58      | 4:59     | 7:18      | 5:46     |
| 18  | 7:00      | 7:22     | 7:41      | 6:24     | 7:26      | 4:39     | 7:59      | 4:30     | 7:57      | 5:00     | 7:17      | 5:47     |
| 19  | 7:01      | 7:20     | 7:42      | 6:22     | 7:28      | 4:38     | 8:00      | 4:30     | 7:56      | 5:02     | 7:15      | 5:49     |
| 20  | 7:03      | 7:18     | 7:44      | 6:20     | 7:29      | 4:37     | 8:01      | 4:31     | 7:55      | 5:03     | 7:13      | 5:50     |
| 21  | 7:04      | 7:16     | 7:45      | 6:19     | 7:31      | 4:37     | 8:01      | 4:31     | 7:54      | 5:04     | 7:12      | 5:52     |
| 22  | 7:05      | 7:14     | 7:47      | 6:17     | 7:32      | 4:36     | 8:02      | 4:32     | 7:53      | 5:06     | 7:10      | 5:53     |
| 23  | 7:07      | 7:12     | 7:48      | 6:15     | 7:33      | 4:35     | 8:02      | 4:32     | 7:53      | 5:07     | 7:08      | 5:55     |
| 24  | 7:08      | 7:10     | 7:50      | 6:13     | 7:35      | 4:34     | 8:02      | 4:33     | 7:52      | 5:09     | 7:06      | 5:56     |
| 25  | 7:09      | 7:08     | 7:51      | 6:12     | 7:36      | 4:33     | 8:03      | 4:34     | 7:51      | 5:10     | 7:04      | 5:58     |
| 26  | 7:11      | 7:06     | 7:53      | 6:10     | 7:37      | 4:33     | 8:03      | 4:34     | 7:49      | 5:12     | 7:03      | 5:59     |
| 27  | 7:12      | 7:04     | 7:54      | 6:08     | 7:39      | 4:32     | 8:03      | 4:35     | 7:48      | 5:13     | 7:01      | 6:01     |
| 28  | 7:13      | 7:02     | 7:56      | 6:07     | 7:40      | 4:32     | 8:03      | 4:36     | 7:47      | 5:15     | 6:59      | 6:02     |
| 29  | 7:15      | 7:00     | 7:57      | 6:05     | 7:41      | 4:31     | 8:04      | 4:37     | 7:46      | 5:16     |           |          |
| 30  | 7:16      | 6:58     | 7:58      | 6:04     | 7:42      | 4:31     | 8:04      | 4:38     | 7:45      | 5:18     |           |          |
| 31  |           |          | 8:00      | 6:02     |           |          | 8:04      | 4:39     | 7:44      | 5:19     |           |          |

### ZONE

## Contacts

**Wolf 24-hour Harvest Reporting Number** ..... 1-877-FWP-WILD  
(397-9453)

### Wolf Quota Status

24 hours/day - 7 days/week ..... 1-800-385-7826  
OR [fwp.mt.gov](http://fwp.mt.gov)

### FWP Wolf Management Specialists –

Helena ..... 406-444-3940  
Bozeman ..... 406-994-6371  
Butte ..... 406-425-3355  
Great Falls ..... 406-750-4279  
Kalispell ..... 406-250-5047  
Livingston ..... 406-600-5150  
Missoula ..... 406-865-0017

### Montana Fish, Wildlife & Parks State Headquarters

1420 East 6th Avenue, PO Box 200701,  
Helena, MT 59620-0701 ..... 406-444-2535  
Wildlife Division ..... 406-444-2612  
Enforcement Division ..... 406-444-2452  
Parks Division (Montana State Parks) ..... 406-444-3750  
Deer, elk, antelope, moose, bighorn sheep,  
mountain goat, and all special drawings ..... 406-444-2950  
Resident and nonresident licensing for  
fishing, upland game birds, migratory birds,  
black bear, and mountain lion ..... 406-444-2535  
Telephone Device for the Deaf ..... 406-444-1200

### Montana Fish, Wildlife & Parks Regional Headquarters

#### Region 1

490 N Meridian Rd  
Kalispell, MT 59901  
406-752-5501

#### Region 2

3201 Spurgin Rd  
Missoula, MT 59804  
406-542-5500

#### Region 3

1400 South 19th Ave  
Bozeman, MT 59718-5496  
406-994-4042

#### Helena Area Res Office (HARO)

930 Custer Ave W  
Helena, MT 59620  
406-495-3260

#### Butte Area Res Office (BARO)

1820 Meadowlark Ln  
Butte, MT 59701  
406-494-1953

#### Region 4

4600 Giant Springs Rd  
Great Falls, MT 59405  
406-454-5840

#### Lewistown Area Res Office (LARO)

215 W Aztec Dr  
PO Box 938  
Lewistown, MT 59457  
406-538-4658

#### Region 5

2300 Lake Elmo Dr  
Billings, MT 59105  
406-247-2940

#### Region 6

54078 US Hwy 2 W  
Glasgow, MT 59230  
406-228-3700

#### Havre Area Res Office (HVARO)

2165 Hwy 2 East  
Havre, MT 59501  
406-265-6177

#### Region 7

352 I-94 Business Loop  
PO Box 1630  
Miles City, MT 59301  
406-234-0900

### Contacts Outside Fish, Wildlife & Parks

#### Montana State Agencies

Agriculture  
406-444-3144  
Guides & Outfitters  
406-841-2373  
Livestock  
406-444-2977  
State Lands  
406-444-2074  
Tourism  
406-841-2870

#### Federal Agencies

US Department of Interior  
202-208-3100  
US Fish & Wildlife Service  
406-449-5225  
US Forest Service  
406-449-5201

#### Federal Agencies continued

Bureau of Land Management  
406-896-5000  
National Weather Service  
406-329-4840 (Missoula)

#### Tribal Lands

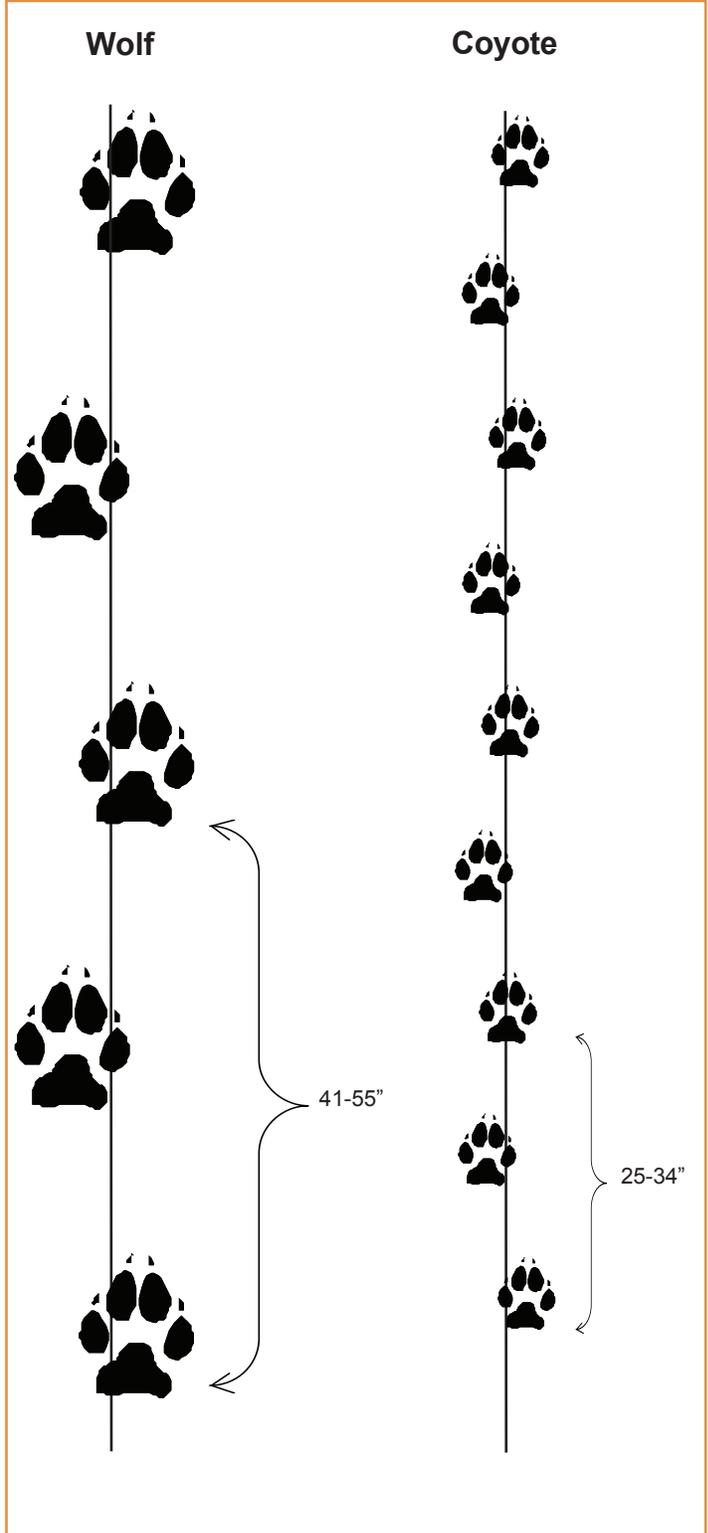
Blackfeet Reservation  
406-338-7276  
Crow Reservation  
406-638-2601  
Flathead Reservation  
406-675-2700  
Fort Belknap  
406-353-2205  
Fort Peck Reservation  
406-768-5305  
Northern Cheyenne Reservation  
406-477-8844  
Rocky Boy Reservation  
406-395-4207

## Tracks Stride Length

The tracks shown below represent a “stride length” measurement comparison between a wolf and coyote.

Track identification for both wolf and coyote. Reference page 10 for actual track size and wolf/coyote identification.

- claws evident
- track generally square shape
- track is longer than wide
- four toes symmetrical
- single lobe on the front of the main foot pad





# Montana Fish, Wildlife & Parks

Wildlife Division P.O. Box 200701 Helena MT 59620

---

November 13, 2012

To Montana Certified Wolf Trapper,

The FWP Commission adopted regulations for the first Montana wolf trapping season at their July 2012 meeting. The wolf trapping season framework included a variety of restrictions, some of which were intended to minimize the take of non-target species. Additionally, the Commission adopted a requirement that Montana trappers complete a wolf trapping education course.

As a person that has been certified for completing the wolf trapping education course, you are being informed that a new wolf trapping regulation was adopted at the November 8, 2012 Commission meeting. This new regulation is a **minimum 8 pound trap pan tension requirement**. This is considered a particularly effective approach to minimize non-target captures, particularly smaller carnivores including lynx, marten, and fisher.

The primary non-target concern is lynx, which is a federally listed ESA species. The FWP Commission has adopted this restriction in the following area that includes federally identified critical lynx habitat:

**Wolf Trap Pan Tension Regulation Legal Description** - Those portions of Trapping Districts 1 and 2 within the following described boundary: From the intersection of US Highway 2 with the Montana-Idaho state line then south and east along US Highway 2 to its intersection with US Highway 93 at Kalispell then southerly along US Highway 93 to its intersection with Interstate 90 then southeasterly along Interstate 90 to its intersection with US Highway 12 at Garrison then easterly along US Highway 12 to its intersection with the Continental Divide at McDonald Pass then northerly along the Continental Divide to its intersection with the Glacier National Park boundary at Marias Pass then westerly and northerly along the Glacier National Park boundary to the US-Canada border then west along said border to its intersection with the Montana-Idaho state line then south along said line to its intersection with US Highway 2 the point of beginning.

Again, please note that this is a new regulation for wolf trapping. If you have questions on this new requirement please contact us at [fwp.mt.gov](http://fwp.mt.gov) or 444-2612.

## Incidental Lynx Take 2000–2015 – Montana

(Source: Montana Fish, Wildlife & Parks 2016. Lynx Conservation in Montana. Unpublished. 10 pp.).

In total, 16 lynx have been captured during the 16-year period. Seven of these lynx were killed, one of the 16 lynx was released with an injury, and eight of the 16 lynx were released uninjured. The average “take” has been 1.0 lynx per year over the 16 year period. Since significant changes to trapping regulation in 2008, the amount of take has decreased. A total of 3 lynx were captured during the 8 license years 2008-2015, and all were released uninjured. Overall, lynx “take” during 2000-2007 averaged 1.6/year, and during 2008-2015, when more protective regulations were in place, averaged 0.4/year, a four-fold decrease.

The following narratives describe all known incidental lynx captures occurring during the last 16 years, from the 2000-2001 license year (winter 2000/01) to present, including the most recent 2015-2016 license year.

1) The first incidental capture occurred on 01/07/2001 near Seeley Lake in Missoula County. This lynx was captured in an elevated marten set (#00 foothold) by a front foot/toes. The animal was turned into the Squires USFS lynx research team for financial compensation. They determined the animal required rehabilitation from starvation and frost damaged toes. One toe was removed and the animal was held, recovered and then later released. It either already had a radio-collar or a collar was placed on the lynx prior to release. Released, Injured.

2) This incidental capture occurred on 01/12/2001 near Lincoln in Lewis & Clark County. This lynx was captured and killed in a #330 conibear trap set for wolverine. This was an elevated leaning pole set using a large diameter tree. The trapper reported the incidental capture immediately to the local warden, in following with state regulation requirements. The local warden reported it was a legal set according to state regulations. The lynx was collared, so the warden recovered the animal with assistance from the Squires USFS lynx research team. The collar was removed and the animal given to FWP, which went to the FWP wildlife lab. Killed. This trap is not legal in LPZs at present. It was not recessed, it was larger than 5”, its leaning pole was >4”.

3) Another incidental capture reported in 2001 occurred prior to 01/23/2001 when at that time a lynx was recovered near Ovando in Powell County by a local warden and the Squires USFS lynx research team. The lynx appeared to have been captured in a #4 foothold trap. The warden determined this was a bobcat set. The animal was found dead approximately 30 yards away from the trap. The Squires team was made aware of the mortality because it was a collared animal with a mortality sensor. There were some lacerations and swelling on a foot. The animal was apparently either released or pulled out of the set and moved away. Killed. This trap is not legal in LPZs at present as #4 traps are 6 ¼”.

4) A young male lynx was reported dead on 3/5/2001 that had been caught in a small #2 double spring foothold trap near Ovando in the Spring Creek area (T16N, R14W, Sec. 15) in Powell County. The radio-collared lynx with the trap on a front foot had broken the anchoring wire and apparently drug around the trap for days. When the lynx was discovered by the Squires USFS lynx research team, the trap wire was tangled up on branches of a tree. The lynx appeared to have starved to death. This type of trap likely had been set for marten, but the incidental capture occurred weeks after the season had closed. Killed. This is an attending in manner of waste violation.

5) A single lynx was captured and released during the 2004-2005 winter trapping season. It was captured and released uninjured in the Middle Fork of the Flathead River by a bobcat trapper. Other than the incidental capture being reported in Flathead County, no other specific information was provided. Released, Uninjured.

6) A Eureka trapper reported that on 12/12/2005 he captured a female lynx in the Brimstone Creek area (T33N, R25W, Sec. 4) in Flathead County in a foothold trap while trapping for bobcats. He reported releasing the lynx uninjured. Released, Uninjured.

7) A Kalispell trapper reported that during December 2005 he caught a lynx in a foothold trap while trapping for bobcats in the Fitzsimmons Creek area (T34N, R24W, Sec. 4) in Lincoln County. This lynx was reported to be released uninjured. Released, Uninjured.

8) A Eureka trapper reported that on 1/02/2006 he captured and killed a lynx in a lethal snare set that was intended for wolverine in the Ten Lakes area (T37N, R24W, Sec. 6) in Lincoln County. The lynx was found dead in the snare so the carcass was recovered by FWP personnel. Killed.

9) A Seeley Lake area trapper reported that on 12/24/2006 he captured a large male lynx in the Uhler Creek area (T18N, R16W, Sec. 18) in Missoula County in a foothold trap while trapping for bobcats. The trapper reported that he released the lynx uninjured. Released, Uninjured.

10) Warden Derek Schott handled an incidental lynx captured on 1/6/2007. This was a male lynx, Missoula County, Placid Creek Drainage. TRS 16N 16W 21. The lynx was dead in a conibear. Killed.

11) The Squires USFS lynx research team reported that during February 2007 a radio-collared male lynx was found dead in the Fawn Creek drainage (UTM 305603 E, 5231479 N) near Seeley Lake in Missoula County. It died as a result of being captured in a #1 Victor foothold trap that had become entangled in dog-hair tree branches and likely starved to death. This trap was probably intended as a marten set. Killed.

12) During the 2007-2008 season a lynx was found dead in a #120 conibear trap set for marten. Unsure if it was a radio-collared research animal. Killed.

13) Also during the 2007-2008 season, a lynx was reported captured in a foothold trap set for wolverine and was then released uninjured in the Kalispell or Eureka area. Released, Uninjured.

14) A Libby trapper reported on 12/17/2012 that the previous week he had captured and released a lynx from a bobcat set. This lynx was captured west of Lake Koocanusa in the Steep Creek drainage at the 12 MM (T34N, R29W, Sec. 7) in Lincoln County. It was released uninjured and had an ear tag from previous research efforts in the area by the Squires USFS lynx research team. Released, Uninjured.

15) A Eureka area trapper reported that on 12/23/2013 he incidentally captured a lynx in a wolf trap. This occurred on US Forest Service land near MM 5 ¾ in the Boulder Creek drainage (T36N, R29W, Sec. 34) in Lincoln County. The uninjured lynx was released immediately in accordance with state wolf trapping regulations and reported to the local game warden that same day. This was determined to be a legal wolf set. The local Game Warden documented the incident. Released, Uninjured.

16) On 12/17/2014 a lynx was incidentally captured and reported in Lincoln County. The lynx was captured in a bobcat set and released via a capture pole. No major injuries were apparent and the lynx did not limp away. The trapper notified Montana Fish, Wildlife and Parks as required. The site was investigated the next day, and the set was legal. Released, Uninjured.

## Trapping Regulation Changes in Montana to Protect Lynx

(Source: Montana Fish, Wildlife & Parks 2016. Lynx Conservation in Montana. Unpublished. 10 pp.).

Trapping of lynx was prohibited by the Montana Fish, Wildlife and parks Commission during 1999. Since that time, there have been a number of changes to hunting and trapping regulations to minimize incidental take of lynx. These include provisions in both FWP's furbearer and wolf regulations.

### **Chronology of Regulation Changes to Protect Lynx from Incidental Capture**

#### **Quick Summary:**

1999 FWP closed lynx season, required reporting of incidental injured or killed lynx, required recessed trigger for large ground-set conibears, added track ID info to regulations to help trappers identify and avoid lynx capture.

2000 USFWS lists lynx as a threatened species.

2002 All incidental captures of lynx (including released uninjured) required reported within 5 days.

2008 Language added to discourage placing sets that might attract lynx. New regulations to minimize incidental lynx capture were adopted in regions 1 and 2 (lynx regions): Lethal snares prohibited for bobcat sets, leaning pole sets limited to <4" pole and must be 48" above ground for marten, fisher, and wolverine.

2012 Wolf trapping initiated with regulations including no use of snares or conibears for wolves, trapper certification class required including topic of avoiding incidental capture, 48 hour trap check mandatory.

2013 Expanded 2008 regulations to portions of regions 3, 4, and 5. Added requirement for 10 lbs pan tension on wolf traps.

2015 Lynx Protection Zones established on public lands in USFWS's critical habitat in two areas, NW Montana and Greater Yellowstone. Additional regulations include: no use of rabbit or hare parts and no use of natural flagging within 30 ft.; No fresh meat baits; Snare cable size and loop diameter limited; Bobcat sets must be checked every 48 hrs and are limited to a maximum jaw size of 5 3/8" or a 10 lbs pan tension

**Details:** \* denotes biennial season setting process when changes can be made to furbearer regulations

#### 1999

- FWP Commission closed lynx season prior to ESA listing in March 2000.
- Animal cat tracks & species identification differences between lion, lynx & bobcat were first illustrated in the furbearer trapping regulations to avoid misidentification and trapping in lynx areas.
- **New Regulation – Lynx Season Closed** - Accidentally trapped lynx that cannot be released uninjured must be immediately reported to Fish, Wildlife & Parks.

- **New Regulation – Body-gripping Ground Sets** – On public land, ground sets using 7 X 7 or larger body-gripping traps must have a trigger recessed a minimum of seven (7) inches within a secure enclosure that provides openings no greater than fifty-two (52) square inches each.

#### 2000\*

- No changes.

#### 2001

- No changes.
- USFWS provided a 10-year Biological Opinion on the bobcat CITES tagging program that allowed two dead and two released uninjured lynx captured in bobcat sets.

#### 2002\*

- **New Regulation – Lynx – Closed Season.** Accidentally trapped and released lynx (uninjured) must be reported to a designated Fish, Wildlife & Parks employee within five (5) days of release. Trappers that accidentally capture a lynx that cannot be released uninjured must immediately notify a designated Fish, Wildlife & Parks employee for assistance to determine disposition and/or collection of the animal. It is unlawful for any person to retain possession of a furbearer after a species limit has been met, a trapping district quota has been reached, or a season is closed (MCA 87-3-501).

#### 2003

- No changes.

#### 2004\*

- No changes.

#### 2005

- No changes.

#### 2006\*

- No changes.

#### 2007

- No changes.

#### 2008\*

- **New Regulation – Lynx – Closed Season.** Lynx are protected by federal law under the Endangered Species Act. Avoid placing sets that might attract lynx. Accidentally trapped lynx that are uninjured must be released immediately and the incident must be reported to a designated Fish, Wildlife & Parks employee within five (5) days of release. Incidental Take – Furbearers that are accidentally captured when the season is closed or trapper limit is met that cannot be released uninjured must notify a designated Fish, Wildlife & Parks employee residing in the trapping district where the animal was taken within 24 hours to arrange collection of the animal. It is unlawful for any person to retain possession of an incidentally taken furbearer per MCA 87-1-102.
- **New Regulation – Special Bobcat Regulations in Trapping Districts 1 and 2** – To minimize the incidental capture of lynx the following special bobcat regulations apply in a portion of Trapping Districts 1 and 2. See legal description, page 10. Bobcat Snares – Lethal snares are prohibited in all bobcat sets.
- **New Regulation – Special Marten Regulations in Trapping Districts 1 and 2** – To minimize the incidental capture of lynx the following special marten regulations apply in a portion of Trapping Districts 1 and 2. See legal description, page 10. Leaning Pole Sets – Pole diameter must be no larger than 4 inches for pole sets with trap and bait 48 inches above the ground.
- **New Regulation – Special Fisher Regulations in Trapping Districts 1 and 2** – To minimize the incidental capture of lynx the following special fisher regulations apply in a portion of Trapping Districts 1 and 2. See legal description, page 10. Leaning Pole Sets – Pole diameter must be no larger than 4 inches for pole sets with trap and bait 48 inches above the ground.

- **New Regulation – Special Wolverine Regulations in Trapping Districts 1 and 2** – To minimize the incidental capture of lynx the following special wolverine regulations apply in a portion of Trapping Districts 1 and 2. See legal description, page 10. Leaning Pole Sets – Pole diameter must be no larger than 4 inches for pole sets with trap and bait 48 inches above the ground.

#### 2009

- No changes.

#### 2010\*

- No changes.

#### 2011

- No changes.

#### 2012\*

- Wolf trapping initiated with the following regulations to aid in prevention of capturing lynx: Trapper certification class required and avoidance of incidental capture covered in class; 48 hour wolf trap check required; Conibears and snares for wolves prohibited.

#### 2013

- **Expanded Regulations – Special Bobcat, Marten, Fisher, and Wolverine in Trapping Districts 1, 2 and portions of 3, 4 & 5.** Language same as above.
- Minimum 10 lbs. pan tension required for wolf traps to avoid lynx and other incidentals.

#### 2015

- New regulations establish lynx protection zones with additional restrictions. The following are taken from Montana’s Furbearer Regulations and apply specifically to those portions of the state identified as Lynx Protection Zones. These regulations are the result of a legal settlement. In the case of issuing an Incidental Take Permit these regulations would no longer be required, but the Fish and Wildlife Commission could, at its discretion, opt to retain some or all of them.

##### **Lynx Protection Zones –**

To help avoid the incidental capture of Canada lynx, special regulations now apply on all public lands in areas identified as “Lynx Protection Zones” (LPZ). Within an LPZ, all trap sets for any species must be consistent with the following special regulations:

- Rabbit or hare parts, whether for flagging purposes or for bait, may not be used within 30 feet of a set trap.
- The use of natural flagging such as bird wings, feathers, or pieces of fur may not be used within 30 feet of a set trap.
- The use of fresh meat baits (aged less than 24 hours) is not allowed.
- All leaning pole sets must use poles that are no larger than 4 inches in diameter and have the trap and bait located at least 48 inches above the ground.
- The use of Conibear or “body-gripping” traps are not allowed unless **one** of the following conditions are met:
  - ▶ they are placed as part of a water set; or
  - ▶ they are placed as part of an elevated set (48 inches above ground) that does not include a leaning pole; or
  - ▶ they have a jaw spread of less than or equal to 5 inches (a Conibear #120 or smaller); or
  - ▶ they are placed in a leaning pole set with a pole diameter of no larger than 4 inches and with trap and bait located at least 48 inches above the ground; or

▶ they are placed with a trigger recessed a minimum of seven inches and contained in a wood, plastic, or metal enclosure or cubby with an opening no larger than 52 square inches.

- The use of snares are not allowed unless **all** conditions below are met:
  - ▶ they have a cable diameter greater than or equal to 5/64 inches; and
  - ▶ they have loops that are larger than 8 inches measured from side to side; and
  - ▶ they are equipped with a breakaway lock device designed to release when more than 350 pounds of force is applied.

• **For trappers targeting Bobcat**, the use of foothold or leghold traps are not allowed unless traps have an inside jaw spread (perpendicular to hinge) of less than or equal to 5 3/8 inches. Trappers targeting bobcat are required to visually check their traps at least once every 48 hours. Only relaxing snares are allowed in bobcat sets. A description of a relaxing snare can be found on page 15.

• Foothold or leghold traps set for wolves in the LPZ can be larger than 5 3/8 inches but must be equipped and set with a minimum 10 pound pan tension device.

• “Take” of lynx is not allowed due to their federal status as a threatened species. Incidental captures, whether the lynx is released uninjured, is injured, or killed are all considered “take” according to the definition set by federal law and used by the U.S. Fish and Wildlife Service,

• Trappers are strongly encouraged to not set traps if lynx are observed in an area or if lynx tracks are identified. Trappers are also strongly encouraged to use live traps (e.g. box trap) and carry catchpoles to aid in the safe release of non-target species.

• Incidentally trapped lynx that are uninjured must be released immediately and the incident must be reported to the local FWP warden or biologist or an FWP Regional Office within 24 hours of release. If a lynx is injured, trappers must immediately notify their local FWP warden or biologist or an FWP Regional Office, to determine disposition and/or collection of the animal. Persons who know about the taking of a lynx should report it by calling 1-800-TIP-MONT (800-847-6668).

# FOREST STAND DYNAMICS

UPDATE EDITION

Chadwick D. Oliver

*Professor of Silviculture  
College of Forest Resources  
University of Washington*

Bruce C. Larson

*Associate Professor of Forestry  
School of Forestry and Environmental Studies  
Yale University*

1  
same  
Larson



John Wiley & Sons, Inc.

New York • Chichester • Brisbane • Toronto • Singapore

Copyright © 1996 by John Wiley & Sons, Inc.

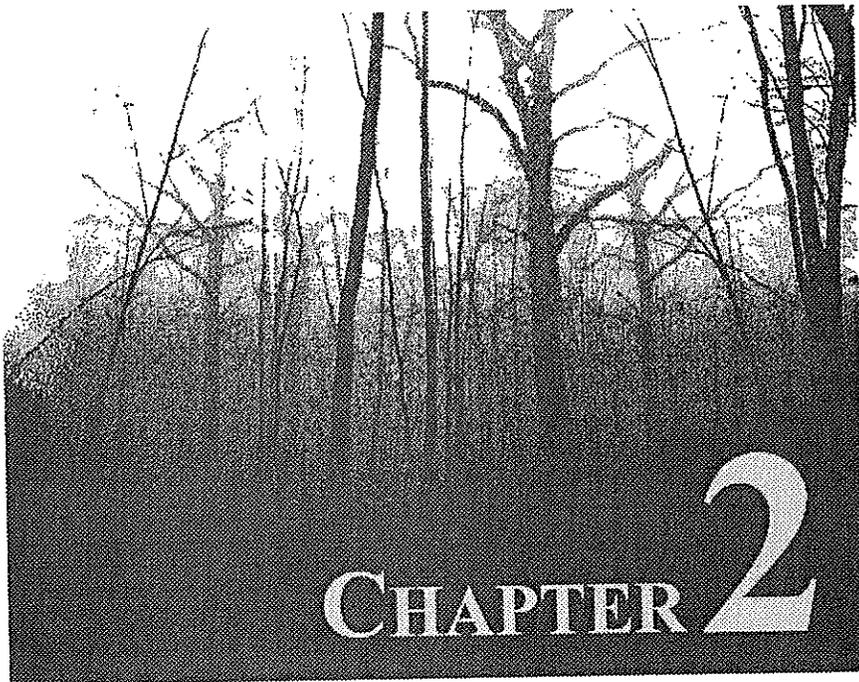
All rights reserved.

Reproduction or translation of any part of this work beyond that permitted by Sections 107 and 108 of the 1976 United States Copyright Act without the permission of the copyright owner is unlawful. Requests for permission or further information should be addressed to the Permissions Department, John Wiley & Sons, Inc.

ISBN 0-471-13833-9

Printed in the United States of America

1 0 9 8 7 6 5 4 3 2 1



## PLANT INTERACTIONS AND LIMITATIONS OF GROWTH

### Introduction

Tree species are not randomly distributed across a landscape. Each one is commonly found on certain soils, in specific climatic zones, in a broad geographic zone, at predictable times following a disturbance, in particular layers in a forest canopy, and in close proximity to certain other species. While the patterns seem to be predictable, they are not universal. The same area can be occupied at different times by totally different groups of tree species. Alternatively, the same species can be commonly found in two different environments. Species which characteristically occupy a certain site or canopy position can occur elsewhere. Similarly, a species can sometimes grow quite vigorously with other species not usually associated with it.

¶The patterns are predictable enough that identifying where a species is found has become a basic part of its description. A species may also be found growing in concert with particular other species with enough regularity that the species are often classified together and associated with certain soils, in certain climates, and at certain times following disturbances. These groups of species have usually been named for one or a few rep-

representative species, depending on the objective of the classification or the behavior of the group. Characteristic groups of species are used to identify the soil or climatic conditions of an area [e.g., habitat types (Daubenmire and Daubenmire, 1968); life zones (Piper, 1906; Scott, 1962); climax associations (Braun, 1950); climax types (Scott, 1962); biogeoclimatic zones (Krajina, 1969); vegetation zones (Franklin and Dyrness, 1973); and indicator species (Hodgkins, 1970). See also Orr (1965), Daniel et al. (1979), Daubenmire (1952), Korstian (1917), Lemieux (1965), Gleason (1926, 1936), Cajander (1926), Cain (1936), Spurr and Barnes (1980), and Braun (1950).]

The earth can be divided into six geographically distinct groups of plants—"floristic realms" (Walter, 1973). The Holarctic realm occupies the northern hemisphere's temperate and boreal forests. The Neotropic realm occupies central and South America; the Paleotropic realm, Africa and southern Asia; the Australia realm, Australia; the Capensis realm, extreme southwest Africa; and the Antarctic realm, coastal southwest South America and the subantarctic islands. The realms generally contain different angiosperm genera because they evolved in relative isolation (Gentry, 1982; Tallis, 1991), while the gymnosperm families can be found in several realms. For example, the *Cupressaceae* family is found on all continents; the *Podocarpaceae* family and the *Araucaria* genus occurs naturally only in the southern hemisphere; and the *Pinaceae* family and nearly all *Taxodiaceae* are found naturally in only the northern hemisphere.

Some genera are common in certain environments within each realm (Bruenig and Y-w Huang, 1989; Gentry, 1989; Junk, 1989; Ashton, 1989; Geesink and Kornet, 1989). Spruces and firs are generally found in cooler sites and pine and oak species often dominate droughty sites throughout North America, Europe, and Asia—the Holarctic realm. Stand structures can be very similar in geographically isolated places within a realm where similar climates and soils exist because the related species often have similar physiological and morphological processes. Similar stand structures can also be found in different realms where genera are not evolutionarily related or in the same realm among unrelated groups of species (Oliver, 1992).

### Mutualism and Competition among Species

Similar patterns of forest development are found in distant forests because similar patterns of interaction occur among trees in most forests. Understanding the interaction among tree species is fundamental to understanding, predicting, and manipulating forest development. Two differing processes of interaction—mutualism and competition—have been used to explain forest development patterns.

#### Mutualism

Historically, trees within a stand were implicitly or explicitly assumed to be mutually interdependent for their survival and growth (Clements, 1916; McIntosh, 1981; Vandermeer, 1982; Finegan, 1984). Just as a lichen is a mutualistic association of an alga and a fungus which have coevolved so that they cannot live independently, species in a forest were perceived as having coevolved. Observations that species were found in predictable groups, as well as post-Darwinian advances in concepts of evolution and coevolution among animals, the systems approach to the sciences, and assumptions

about correlation between sizes and ages of trees, have reinforced the mutualistic concept (Vandermeer, 1982).

At its extreme, a community of plants was considered a "superorganism." Each plant lived in delicate balance with the others. Community integrity continued only if unaffected by external forces. Interpretations of how stands behave under different outside forces were predicated on the interdependence of the various plants (Clements, 1916; Odum, 1971).

The superorganism idea has influenced many philosophical, political, and ecological ideas of forest development and management. It is important to be aware that many attributes, perspectives, and descriptions of forest development may subconsciously be rooted in the mutualistic concept of forest communities. Such ideas as steady state, constant final yield, habitat types, climax, plant functions and strategies, plant community directions, and ecological concerns about some forest management practices may have this bias. [For more information, see discussions by Braun (1950), Mueller-Dombois and Ellenberg (1974), Richardson (1980), McIntosh (1981), and Kimmins (1987).]

### Competition

Most forest scientists now feel that the interaction between tree species usually results in one individual's having an advantage and dominating or killing another. This interaction is termed *competition*. Unlike mutualism, competition implies that trees have not evolved a dependence on each other but actually can impede each other's growth. Competition, not mutualism, is now considered the primary pattern of interaction among holarctic tree species, and probably among trees in other floristic realms.. Trees are not highly specialized plants; they are versatile organisms with many adaptations which allow them to survive in a variety of biological and physical environments. Many of their adaptations may not be exhibited under all growing conditions.

Some evidence that tree interactions are more competitive than mutualistic includes the following:

1. *Behavior of managed and logged stands.* Some forestry and logging practices affect plant communities in far different ways than occur naturally. The plants have responded to these treatments resiliently by regrowing rather than behaving like organisms which were too specialized and interdependent on each other to respond to a completely different environment than they had previously experienced. Forests on fragile soils even regrew vigorously after being clearcut and the regrowth suppressed for 3 years by herbicides (Bormann and Likens, 1981).

2. *Species migrations and longevity of forest communities.* Recent evidence suggests that many apparently stable forest communities are in fact relatively recent assemblages of tree species which did not necessarily live together as communities in the past (Davis, 1981; Brubaker, 1991; Sprugel, 1991). In fact, changes in climates cause interactions among species to differ (Davis, 1986). Consequently, plant interactions observed at any time are unique to the climate as well as the species.)

Evolution occurs by genetic changes in progeny. The degree of coevolution is closely related to the number of generations during which coevolving species have been together. For forest species, a new generation is generally produced when a significant distur-

bance occurs to the forest. Even then, regeneration sometimes occurs by asexual mechanisms. Forest trees therefore produce successful genetic recombinations at very infrequent intervals—much less frequent than the time when a species first becomes fecund. Few presently identified tree communities have been together long enough for coevolution toward mutualism to have occurred to an appreciable extent. Mixed stands of Douglas-fir, western hemlock, western redcedar dominate the lower elevation forests of western Washington, U.S.A.; however, they have existed as a community for only about 6,000 years, and “No compelling evidence...suggests that this forest type existed elsewhere before...” (Brubaker 1991). If a disturbance large enough to initiate a new stand occurred approximately every 400 years (Agee, 1981; Fahnestock and Agee, 1983), only 15 generations of these species have lived together in these mountains. These are about as many generations as have occurred in humans since Columbus came to America. Similarly, western hemlock has been present in the forests of Idaho and Montana only about 2,000 years (Mack et al., 1978a,b; Karsian, 1995), but is a major component of some stands.

Other evidence (Spaulding and Martin, 1979; Van Devender et al., 1979; Van Devender and Spaulding, 1979) has shown that plant species do not necessarily migrate together as communities in response to climatic shifts (which are still occurring today; Lamb, 1977). Apparently stable plant communities often consist of assemblages of species which migrated from different locations and will probably continue to migrate quite independently of each other.

3. *Recent introductions and eliminations of species.* Elimination of one species in a stand should negatively affect other components of the stands if strong mutualistic interdependencies exist among tree species. Species which have been or are being eliminated by pathogens—such as the American chestnut (Korstian and Stickel, 1927; Braun, 1942; Woods and Shanks, 1959; Hepting, 1971; Jaynes et al., 1976), the American elm (Parker and Leopold, 1983), and the western white pine (Miller et al., 1959; Hepting, 1971)—have been replaced by other species. Often, the remaining species grow better without the eliminated one. The tree species in each community had not evolved such an interdependency that they could not live without these other species.

The ability of introduced plant species to live within a native plant community—and not be excluded by the original species—also indicates that mutual interdependencies are not a strong force in tree community interactions. Japanese honeysuckle is now a common wild species in many communities in the southeastern United States. Douglas-fir has been growing for many decades in mixed stands with native species in central Europe. Incursion of nonholarctic genera such as *Eucalyptus* into parts of North America, Europe, and Asia suggests that plants are readily able to grow with new species, and therefore do not have a strong dependency on a specific, surrounding set of plants.

4. *Recent evidence of age distributions and disturbances in forests.* Part of the evidence for mutualism between forest trees has been the assumption that different tree species became established at progressively later times after a disturbance when the preceding species had created the appropriate environment. This younger tree then grew and established the appropriate environment for even another species to invade. The vertical stratification of tree species within a forest and the small sizes of the understory

trees was interpreted as the smaller trees' being younger (Meyer and Stevenson, 1943; Phillips, 1959; Mueller-Dombois and Ellenberg, 1974). This interpretation reinforced the concept of a mutualistic, all-aged forest development pattern. More detailed evidence (Fig. 2.1; and Wilson, 1953; Blum, 1961; Gibbs, 1963; Marquis, 1967; Roach, 1977; Oliver, 1980) shows that the understory stems are not necessarily younger; rather, they have been outcompeted by the dominating species and are now growing very slowly.

### Mutualism and Competition

Actually, both mutualism and competition probably occur to some extent among tree species, since the two are not mutually exclusive. Species which have not been in close proximity would probably behave more competitively, since no opportunity for coevolution would exist. Plants which have lived together in a stable environment for many generations would probably tend toward coevolution and mutualistic behavior. In this book, forest stand development patterns can be best understood if competition is assumed to be the primary interaction.

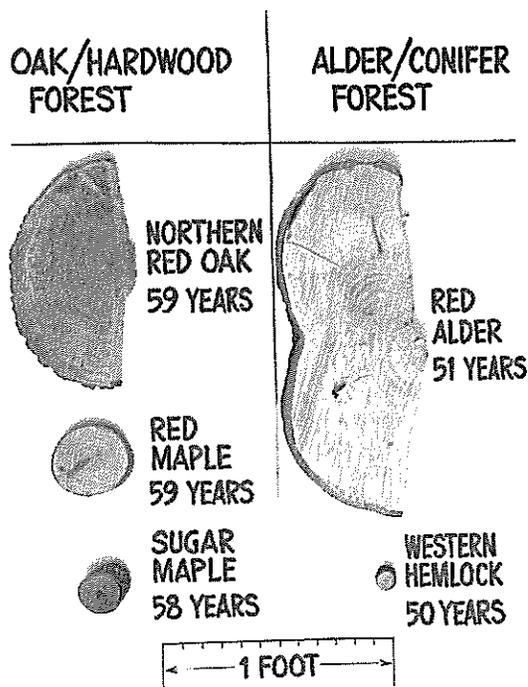


Figure 2.1 When many species invade at one time after a disturbance, some outcompete others and grow larger. Relative tree size does not indicate age, and trees of greatly different sizes can be the same age, as shown by these tree sections taken at 1.4 m (4.5 ft) in mixed-species stands (Oliver, 1980). Shown are oak/hardwoods from northern Connecticut and alder/conifers from western Washington. (See "source notes.")

### Where Plants Are Found

Tree species are not predestined or obligated to grow only on certain sites or with certain other species. They are found where their seeds (or stumps or roots, in the case of sprouting species) are present and where they can survive and compete successfully with the surrounding vegetation. Local conditions or geographic barriers can prevent the presence of a plant. For example, an area may not contain a species, even if all other conditions are appropriate, if the area is upwind from seed sources and the species regenerates from seeds dispersed by wind. Similarly, distant regions may contain appropriate climates, soils, and other conditions for a species to grow; but the species may not have migrated to this area because of oceans, mountain ranges, or other obstacles.

Whether a tree can survive a given physical environment depends on the species' physiological characteristics and the characteristics of the environment. Whether a tree can compete successfully depends on the attributes of the species, its competitors, and the environment.

Physiological characteristics are continually being researched; however, studies of forest development generally do not wait for a resolution of all physiological processes to define important relations among trees. Empirical evidence of where each species can and cannot survive is accepted, and physiological evidence is used to refine the knowledge as it becomes available.

### The Niche

Describing where a species can survive and compete under the many influences of the environment can be conceptually systematized under the framework of environmental gradients and the niche.

### The gradient of soils

The environment varies in many ways. For simplicity, only one component—the soils—will be treated at first. Soil variations and their influence on forest growth have been widely studied. Consequently, soil influences will be alluded to in this book but rarely described in detail. Soil influences can often be inferred from the geomorphologic and climatic conditions. The geomorphology, of course, determines the potential minerals, particle sizes, chemical composition, and landscape of an area. The climate strongly governs the rate of weathering and leaching, and hence nutrient availability, soil texture, and organic material. Understanding how these interact with the vegetation allows one to anticipate the responses of the different trees to the soil condition.

Two contrasting soils will first be used to illustrate the concept of competition and shed light on where species are found and why. Two large areas of the different soils are shown schematically in Fig. 2.2. All other environmental factors are equal. One area contains a droughty, sandy soil of poor productivity. The other area contains a highly productive, moist, well-drained, sandy clay loam soil. If a species (tulip poplar, for example) is planted in both areas, it will grow best in the moist soil. If another species (Virginia pine, for example) is planted in both areas instead, it will also grow best in the moist soil. Both species grow best on the productive soil; however, pines do not grow as

well as tulip poplars on the productive soil, but they grow better than tulip poplars on the less productive soil (Doolittle, 1958; Broadfoot, 1970).

If both species are now planted together in each area and the most vigorous species in each area outcompetes and suppresses the other, two outcomes will occur. Tulip poplars will be found on the best site, and pines on the poorest. Pines will be found on the poorest site *not* because they grow best there, but because they can outcompete tulip poplars there.

As a general rule tree species can grow best in moist, well-drained, sandy clay loam soils; however, species tend to grow where they can compete successfully, *not* where they can grow best.

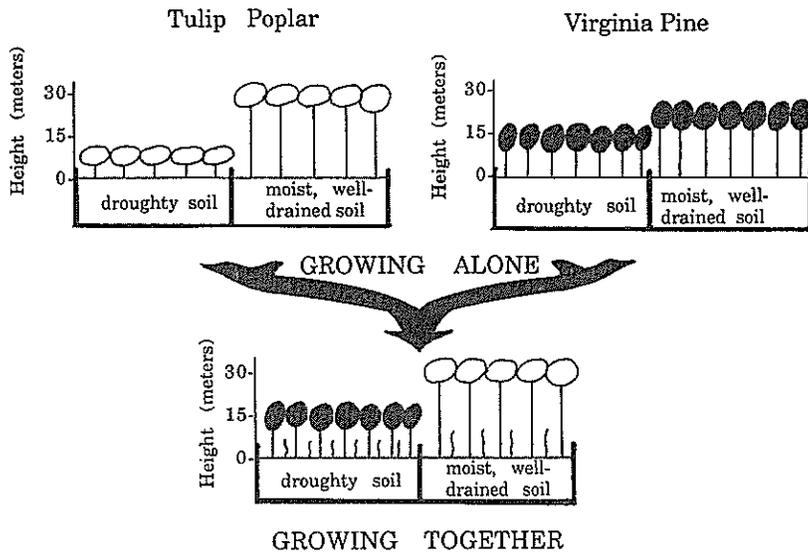


Figure 2.2 Most species are not found naturally where they grow best; rather, they are found where they can compete successfully. A schematic relation of growth and competition of two species is shown. Both species grow best on moist, well-drained soil; however, Virginia pines are found on "droughty soil" when both species grow together because they outgrow tulip poplars there (Doolittle, 1958). (Here, height growth is assumed to represent ability to compete.)

A species which grows rapidly on productive sites but poorly on unproductive sites is termed *site-sensitive*. Site sensitivity is relative. A species may be considered site-sensitive compared with one species and insensitive compared with another. When tulip poplars and Virginia pines are compared, tulip poplars are considered site-sensitive and Virginia pines are considered site-insensitive. As a rule, hardwoods—with tulip poplars, cottonwoods, and sweetgums as extremes—are quite site-sensitive and conifers are generally less site-sensitive.

The above example implied that the species which attained the greatest height would be the most competitive and dominate the site. Other factors of spacing, regeneration

mechanism, and disturbance type are also important in determining dominance. Competitiveness of a tree on a site does not necessarily mean greatest biological productivity [greatest volume per area (hectare or acre) per year]. The most competitive trees on a site sometimes produce less biomass than less competitive ones would have, had they been allowed to grow. Pine and other conifer stands often produce much more biomass (especially when averaged over several years) than hardwood stands on productive sites as well as on poor ones (Frederick and Coffman, 1978). Conifers, however, are often outcompeted by hardwoods on good sites and so are more often found on poor sites.

Silvicultural activities of site preparation and weed control in conifer plantations are intended to give the more productive conifers an initial competitive advantage on sites where hardwoods would otherwise outcompete them. Less silvicultural weed control is necessary to establish conifer stands on poor sites than on more productive sites. On very productive sites, expensive efforts are required to reduce the hardwood competition; and silviculturists often allow hardwood stands to grow even though more volume could be produced from conifers.

A gradient of soil environments exists, instead of just two discrete types. In fact, there is an almost infinite series of soil gradients such as soil moisture, pH, cation exchange capacity, and others (Coile, 1952); however, only a single, generalized gradient of soil moisture will be considered first.

Figure 2.3 shows four schematic gradients of soil moisture ranging from droughty, sandy soils (xeric) through moist, well-drained soils (mesic) to overly moist (hydric) soils (similar to Whittaker, 1965). Available soil moisture often limits growth on xeric sites, while soil oxygen limits growth on hydric sites. Within each general forest type, tree species are usually found at specific places along this gradient. (Simplifications are made here for illustrative purposes.)

In all four examples (Fig. 2.3), all species grow best on the mesic soils—the moist, well-drained ones. Some species are very site-sensitive—e.g., yellow poplar in the eastern upland forest, sweetgum in the southeastern Coastal Plain forests, grand fir in the northern Rocky Mountains, and red alder on the Pacific Coast. They decline dramatically in vigor as soil conditions become worse. Some species cannot even survive under some soil conditions.

A few species can tolerate both very dry, and very wet soils—Atlantic white cedar in New England (not shown in Fig. 2.3) and lodgepole pine in the Pacific northwestern United States, as examples. These trees often live under physiological drought conditions on both sites, since there is no water on the xeric site and the roots cannot live in the anaerobic soil on the wet site to obtain the water.

When many species grow together, each species predominates along that portion of the gradient where it can compete best. The result is a general pattern to the vegetation. Each species could grow on a much wider range of sites; however, each is found where it can compete successfully with the other species present. If one species were eliminated—such as western white pine from the Pacific northwestern region—the next mostly competitive species would predominate—lodgepole pine on the drier sites and Douglas-fir on the moister sites.

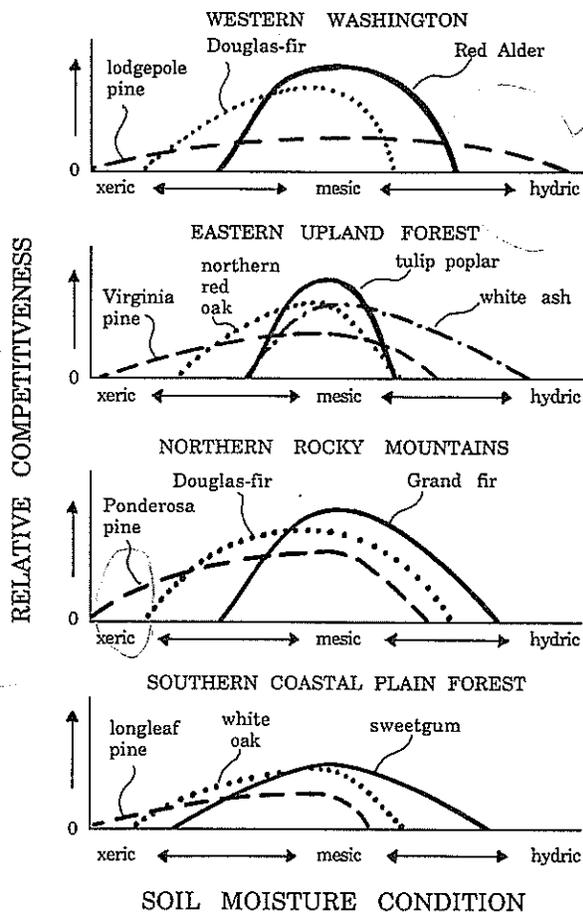


Figure 2.3 Schematic of potential niches and relative competitiveness of selected species growing together in four forest types. All species grow most vigorously on mesic sites, but each is found in its "realized niche" where it outcompetes other species—or where other species cannot grow at all.

In some cases (eastern uplands, northern Rocky Mountain, and southeastern Coastal Plain forests, Fig. 2.3), each species has the competitive advantage in one continuous segment along the soil moisture gradient. Consequently, the number of situations which allow a different species to dominate equals the number of species. Where a species has a competitive advantage in more than one segment of an environmental gradient (e.g., lodgepole pine in western Washington), the number of segments in which one species dominates exceeds the number of species.

Very few species can survive on the extreme sites, and sometimes a species is found on these sites simply because no other species can live there. Presence of a species on these site extremes can generally be correlated with soil productivity above the minimum level necessary for the plant to exist. Where many species compete on mesic sites, the

dominant one may have gained the competitive advantage from gradients other than soil conditions. Identifying sites using plant indicators—*vegetation typing*—is generally more advanced and more accurate in environmental extremes—such as in the droughty Rocky Mountains or at upper elevations. There, the few species indicate the limits of different plants' abilities to survive on certain soils.

Where each species can grow along the soil gradient will be defined in this book as its soil *fundamental niche* (Hutchinson, 1957; Kimmins, 1987). In fact, this fundamental niche would be defined by an almost infinitely large number of subtle gradients of pH, texture, nutrient availability, and other soil conditions; however, for conceptual purposes, it will be regarded as a single gradient.

A plant's competitive vigor varies within its niche; therefore, it may rarely be able to compete within parts of its fundamental niche. Where a species is actually found is its *realized niche* (Kimmins, 1987). The realized niche of each species is flexible and depends on the species with which it grows on each site.

Two or more species can have nearly identical vigor in many places along a gradient. [For example, Virginia pine and red oak have nearly identical vigor on moderately xeric sites (Fig. 2.3).] Environmental conditions which allow two or more species to compete equally well at places along a gradient will be referred to as *transition conditions*. Other factors—or gradients—may give different species a competitive advantage at transition conditions.

Other gradients besides soil exist in the environment, and tree species vary in their abilities to survive and compete along them as well. They are as complex as the soil gradient, but will also be simplified for this discussion. Climatic variations will be considered next.

### The gradient of climate

Climate variations and their influences on forest growth have also been widely studied, and so will not be described in detail in this book. Climatic patterns are somewhat predictable based on the physics of the circulating earth (MacArthur, 1972), and similar climates can be found in many different parts of the earth.

Temperature and moisture regimes exist in a gradient within each climatic zone. Like the soil gradient, climate contains an almost infinite number of gradients in temperature, humidity, wind speed, and other variations throughout the day and year; however, it is considered a single gradient for this discussion. The vigor and competitiveness of each tree species vary with temperature and moisture conditions, just as they do with soil conditions (Woodward, 1987). Consequently, species' niches are generally found along a climatic gradient (Daubenmire, 1966).

The climate generally becomes progressively cooler and moister as one moves either toward the poles or to higher elevations. Consequently, the same species are often found at high elevations in low latitudes and at low elevations in high latitudes. An elevation change of 300 m (1000 ft) is roughly equivalent to 160 km (100 mi) of latitude in similar climatic zones (*Hopkins Bioclimatic Law*; MacArthur, 1972).

Unlike the situation with soil conditions, there does not seem to be an optimum climatic condition for all species. This lack of an optimum climate is because "climate" integrates several environmental influences on plants. Most plants do have a similar

optimum temperature range for photosynthesis (Kozlowski et al., 1991); however, different climates require plants to withstand different extremes and durations of heat and cold, as well as different triggering mechanisms for growth (such as day length and degree-days). In fact, the climatic niches of some species do not overlap at all, and it is difficult even to keep some species alive in the same climate under the very artificial conditions of an arboretum.

**Three-dimensional niche**

The interrelation of two gradients such as climate and soil can be conceptualized as a three-dimensional niche. Figure 2.4 shows the conceptual three-dimensional niches and the relative vigors of Douglas-firs, red alders, and lodgepole pines in western Washington within each niche. Lodgepole pines can grow on many sites in western Washington but are usually found in very moist areas, on very droughty glacial outwash soils, or at very high elevations—where other species do not survive. The more mesic sites are occupied by the more competitive Douglas-firs and alders. As this example illustrates, there is no single set of environmental variables which defines where a species can be found; it can be found under several environmental conditions depending on its behavior and that of its competitors.

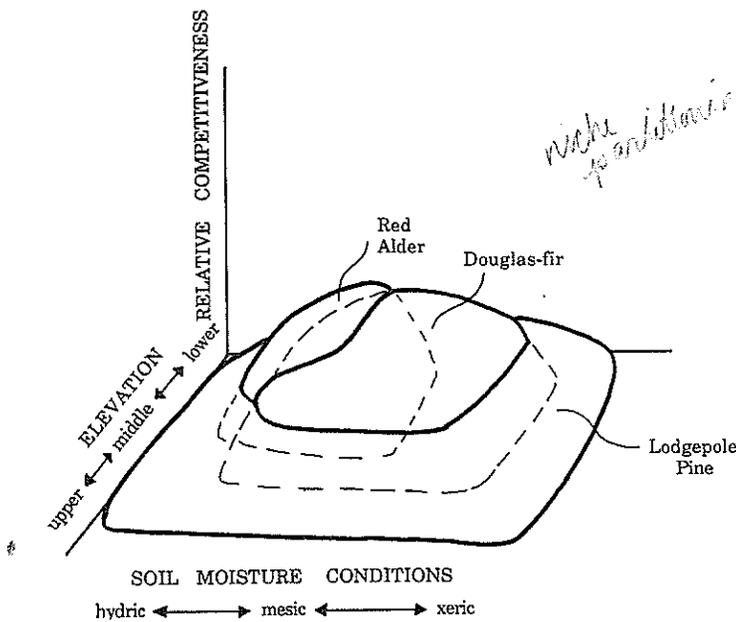


Figure 2.4 When several species' growth potentials are plotted on many gradients, each species' potential and realized niches are described. Niches and relative competitiveness of Douglas-fir, red alder, and lodgepole pine in western Washington distributed along the gradients of soil moisture and elevation are shown.

If three species exist along two environmental gradients and each species is most vigorous along one segment of each gradient, a total of  $3 \times 3 = 9$  different combinations of plant interactions can exist. Each plant would be dominant in an average of three interactions. In the above example, lodgepole pine is most vigorous along two segments of the soils gradient; therefore, a total of  $3$  (climate)  $\times$   $4$  (soil) = 12 different combinations of situations can exist where a different species can gain a competitive advantage. It can be seen that the distribution of trees cannot be explained by a single set of environmental conditions. The same species can exist under quite different conditions for quite different reasons.

While forest patterns are quite complicated, they are not random because given interactions do have predictable outcomes *provided all environmental factors are known*. Often, groups of species are found together under similar soil and climate conditions although the species may have different niches in other gradients. These groups of species have been described as *communities or forest zones* and described according to various environmental gradients (Franklin and Dyrness, 1973).

#### **Multidimensional niche**

Other factors besides soil and climate influence where and how vigorously a species can grow. These other factors also exist as gradients. An increasingly complex multidimensional niche can be found by combining all gradients into an abstract "hypervolume" containing more dimensions than the two shown in Fig. 2.4 (Hutchinson, 1957). The survival of a plant will depend on whether its vigor at a given place along all combined gradients allows it to compete successfully with other plants which happen to be present.

This concept of the niche is useful for estimating which factors influence plant growth significantly, for systematizing the influences, and for understanding the complexity of interactions among factors.

The complexity of forest patterns increases dramatically both with the number of species and with the complexity of the environment as one goes from relatively simple stands of few species, such as in artificial plantations or at polar latitudes, to stands of many species at lower latitudes. For example, with 2 species and 4 gradients in which each species had a competitive advantage along one segment of each gradient, there would be a total of  $2^4 = 16$  competitive situations in which one species could have an advantage. Each species would dominate an average of 8 competitive situations. If the number of species were doubled, a total of  $4^4 = 256$  different situations, each species would dominate in an average of 64 different situations.

#### **Other gradients**

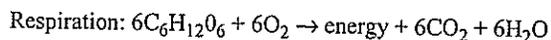
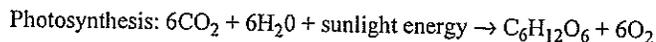
Although many gradients exist, two other factors in addition to soils and climate will be discussed as gradients in this book. These factors are disturbances and time since disturbance. Like soil and climate, each could also be subdivided into an almost infinite number of subunits. Disturbances are covered in detail in Chap. 4. Time since disturbance is covered in Chaps. 5 through 14.

## Limitations to Growth

Trees growing in suitable climates and soils will increase in size and number until one or more factors necessary for growth are no longer available. Plant growth is unlike growth of many animal populations in which behavior patterns control the size and number of individuals before the physical resources are depleted.

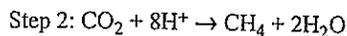
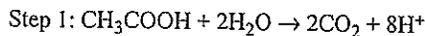
Which factor becomes limiting to plants varies. The degree to which each species slows in growth as each factor becomes limiting varies also, although the growth variation is usually not great. Oversimplified generalizations are often made about what is limiting growth. Some sites are described as "droughty," or "moisture limiting"; light is considered limiting in shaded conditions; nutrients are considered limiting on some sites. Such oversimplifications are sometimes useful if one appreciates that growth limitations are in fact more complicated.

Factors necessary for tree growth, and consequently those which can become limiting, can be inferred from the oversimplified photosynthetic and respiration equations:



These two equations express opposite chemical reactions but are not "mass balance" equations per se which exist in equilibrium. The photosynthetic reaction produces organic sugars and releases oxygen by using carbon dioxide from the atmosphere, water from the soil, and energy from sunlight. Photosynthesis occurs within a certain range of temperatures and requires mineral elements as catalysts. The sugars then either are converted to other organic compounds and used as structural or functional components of trees or are used as an energy source for plant survival and growth, resistance to insect and disease attacks, transport of substances, or conversion of organic molecules from one form to another.

Energy is obtained from the compounds produced by photosynthesis through the respiration reaction. Here, oxygen from the atmosphere (often the soil atmosphere for root respiration) is necessary, as are minimum temperatures, certain nutrients, and the sugars produced by photosynthesis. Unlike the situation in photosynthesis, in respiration the release of energy from organic compounds is done by plants which do not photosynthesize (fungi and bacteria) and by animals, as well as by photosynthesizing plants. The release of energy can also occur abiotically when a fire burns and follows the same reaction. Without oxygen some bacteria carry out anaerobic respiration with some organic molecules through a different, two-step reaction and produce methane ( $\text{CH}_4$ ) and water:



The factors necessary for tree growth, therefore, are sunlight, water, certain mineral nutrients, suitable temperatures, oxygen, and carbon dioxide. Each factor must be avail-

able to the tree in the appropriate form and location. Their physiological relation to tree growth has been discussed in detail elsewhere (e.g., Salisbury and Ross, 1969; Leopold and Kriedemann, 1975; Kramer and Kozlowski, 1979; Larcher, 1983; Chabot and Mooney, 1985; Kozlowski et al., 1991; Milner and Coble, 1995) and will be discussed only briefly here.

### Sunlight

Trees generally photosynthesize increasingly faster in bright light up to full sunlight (Fig. 2.5; Boysen-Jensen, 1932; Kimmins, 1987) if other factors do not become limiting. Some species can survive in more shaded conditions than others, since their leaves photosynthesize enough at lower light intensities to stay alive. Such species are described as *shade-tolerant*. The lowest light intensity at which a leaf can sustain itself (the *compensation point*) is not very different among species. For example, the compensation point of individual leaves of woody plants ranges from 0.3 to 1.5 percent of full sunlight—a difference of only 1.2 percent (Larcher, 1983). More light is needed for whole trees to survive, since the leaves must photosynthesize enough to keep stems, branches, and roots alive. The extra sunlight utilized by the shade-tolerant species contributes little to growth, although it may enable the species to survive in understory, shaded conditions. For survival of the entire tree, the architecture, spatial arrangement of leaves, and respiration rates of stems, branches, and roots are important in allowing some species to survive at lower light intensities than others. Seedlings of very shade-intolerant species such as ponderosa pine need a minimum of 30 percent full sunlight to survive in the understory. Very shade-tolerant species such as sugar maple can stay alive at levels below 5 percent (Burns, 1923; Bates and Roeser, 1928).

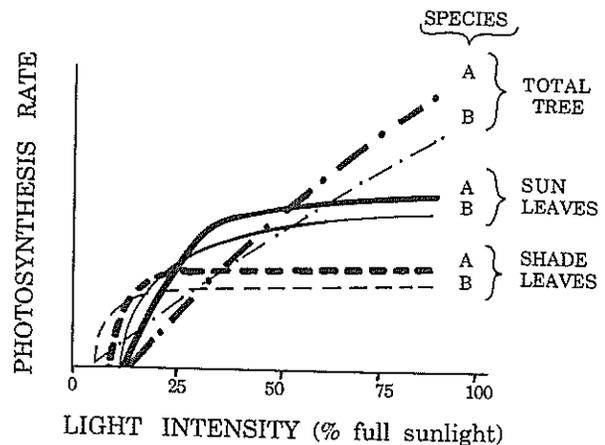


Figure 2.5 Schematic photosynthesis rate for sun and shade leaves of two species (A and B). The magnitudes of the curves vary for different species. Light intensity at which zero net photosynthesis occurs—the “compensation point”—varies slightly, but the general curve shape stays similar. Total tree photosynthesis continues above about 25 percent full sunlight because the leaf angles alter (Leopold and Kriedemann, 1975).

A few forest shrub species cannot withstand direct sunlight; they grow best at intermediate sunlight intensities but grow very poorly in very bright or very dim light. These plants, such as salal, are usually found beneath the forest overstory shade. Some tree species may behave similarly. The inability to grow well in full sunlight is probably related to heat stress in the leaves or water stress caused by rapid evapotranspiration.

### Water

Water is available to plants from the soil primarily as capillary water in small pores and surrounding individual soil particles. The remaining water adheres to soil particles at progressively stronger tensions as soil water is depleted. As the plant exerts tension (through evapotranspiration) greater than the attraction tension of the soil, water moves from the soil into the plant. Trees vary in their abilities to extract water from the soil and endure conditions of high soil water tensions without injury. Most tree growth occurs at soil moisture tensions of less than  $-6$  bars. Little growth seems to occur even in site-insensitive species at higher moisture tensions. Site-insensitive species may have a competitive advantage on the drier sites both through the ability to survive periods of high soil moisture tension (dry periods) and from the slight growth advantage gained from soil water extracted at very high tensions (Levitt, 1980).

Leaves of different species vary in ability to reduce evapotranspiration to minimal rates while living under high temperatures without the cooling effects of evapotranspiration. Under droughty conditions, the stomata of some species (*drought avoiders*) close, shutting off transpiration and maintaining a high internal moisture level, while others (*drought endurers*) continue transpiring until their internal moisture is quite low (Hinckley et al., 1981; Pezeshki and Hinckley, 1982).

### Nutrients

Elements are taken up by trees in a few inorganic molecular forms. Each element is absorbed optimally in a single ionic form for most tree species, but other ionic forms are usable by some species. Carbon (in carbon dioxide), hydrogen (in water), and oxygen are discussed separately in this chapter. Species are found along a gradient of availability of different nutrients (Voigt, 1968; McColl, 1969). Once inside the tree, most nutrients are concentrated in the leaves, phloem (inside the bark), buds, root tips, and reproductive organs. To varying extents, tree species can internally recycle certain nutrients before their foliage is abscised. This recycling varies greatly between nutrients and species.

Soil pH can also be considered a gradient which gives different species an advantage. Most tree species grow optimally on slightly acid soils, and trees generally live between pHs of 4.0 (very acidic) to 7.5 (slightly basic; Spurr and Barnes, 1980). Certain species have the ability to grow at more extreme pHs than others. Some species are found on extremely acidic or basic soils *not* because they grow best there, but because they are uniquely able to survive there. Plants of the Ericaceae family (Rhododendron, Kalmia, and Vaccinium, for example) grow well in acidic soils. Other species seem to grow best on basic soils (Brooks, 1987).

Species vary in their ability to extract elements from either organic or inorganic media. The large size of conifer fine roots may give them an advantage in extracting nutrients from primary minerals, perhaps giving conifers a growth advantage on less well developed soils (Voigt, 1968). Alternatively, the smaller, more numerous fine roots of hardwoods may provide more surface area for nutrient absorption from organic matter in well-developed soils.

Mutualistic associations between microorganisms and tree roots increase the ability of the tree to absorb essential elements. Mycorrhizal associations between fungi and roots expand the tree root systems' surface area for absorption because of the large surface area of fungal mycelia. Mycorrhizal fungi also extend the life of fine, absorbing roots; they break down complex organic molecules and pass the extracted nutrient elements to the roots. It is unclear if different fungal species absorb nutrients from different sources and in different forms. Under high soil nutrient conditions (such as in a green house or nursery), the mycorrhizal association develops less. Seedlings without mycorrhizae which are planted in soils without the fungal inoculum present often do not survive, unless inoculum is incorporated into the soil (Hatch, 1936; Lutz and Chandler, 1946). The mycorrhizal association also does not develop well if the seedling is very weak.

Nitrogen is unique among essential elements in the way it becomes available. It is absorbed from the soil; however, most soil nitrogen must be fixed from the atmosphere by bacteria, actinomycetes, and possibly other microorganisms. Certain tree species form close associations with nitrogen-fixing microorganisms. These lower plants grow in root nodules—abnormal growths of the tree roots. Alders and leguminous species such as black locust, mesquite, and acacia are especially known for their nitrogen-fixing associations. Nitrogen-fixing abilities may give these plants temporary advantages on poor soils. Alders and leguminous trees have rapid early growth on poor soils, but their best growth is on more mesic, well-developed sites. On poor sites, even where nitrogen appears limiting, alders and legumes can be eventually outcompeted by more site-insensitive conifers. Other tree species may develop a soil environment around their roots which promotes nitrogen incorporation (*fixation*; Richards and Voigt, 1963).

#### **Free-growing microorganisms and nutrient availability**

Microorganisms require the same factors for survival and growth as photosynthesizing plants do, except that nonphotosynthesizing microorganisms obtain their energy from organic compounds in litter from dead roots, abscised leaves, fallen branches or trees, and dead animals (or living plants and animals in the case of parasites). In the process of obtaining energy, microorganisms decompose (respire) the organic material into small organic compounds and release carbon dioxide, water, heat, and inorganic nutrients. Microbes reabsorb these nutrients for further growth until a shortage of nutrients is no longer the limiting factor in the microbes' growth. This change occurs when some other factor, usually available organic matter for energy, becomes limiting. Microbes can extract nutrients from both mineral sources and decomposing organic matter. Microorganisms take up nutrients more efficiently than higher plants do; therefore, higher plants are usually able to get nutrients only through their mycorrhizal association, or after the microorganisms no longer require them for growth.

Nitrogen is the most commonly limiting nutrient for tree and microorganism growth, in part because it is used in higher concentrations than the other nutrients. Even where nitrogen is present in the forest litter, it is not available where chemically bound in organic matter until microorganisms decompose the litter and release it (Switzer and Nelson, 1972; Gosz et al., 1976; Turner, 1977; Nadelhoffer et al., 1983). The rate of nitrogen release depends on the digestibility of the litter and the need of nitrogen by the microbes. Where the litter has a high lignin content, it is not very rapidly digested (Fogel and Cromack, 1977; Melillo et al., 1982).

The carbon/nitrogen ratio is an index of nitrogen availability to higher plants. In fresh litter, carbon/nitrogen ratios over 100 are common, while decomposed material near the bottom of the soil organic layers has carbon/nitrogen ratios of 10 or less (Lutz and Chandler, 1946; Buckman and Brady, 1964; Staff and Berg, 1982; Waring and Schlesinger, 1985). Energy eventually becomes limiting to microorganisms with the depletion of organic matter. Inorganic nitrogen is then less needed and so may be released by the microorganisms. Nutrient fertilization can have a "snowballing" effect on fertilizer availability to the trees. Some fertilizer is immediately taken up by the trees, while that taken up by microorganisms increases their growth and respiration, which leads to increased decomposition and nutrient release from previously undecomposed organic matter.

In warm, moist climates such as in river floodplains in the southeastern United States and in lowland tropical forests, microbial decomposition of forest floor organic matter proceeds rapidly, and little litter remains on the ground. Consequently, nutrient recycling through the litter and back to the plants occurs rapidly. In cooler or drier climates, microbial activity proceeds more slowly, and the forest floor organic matter decomposes more slowly than it accumulates from dying roots and falling leaves, branches, and trees (Olson, 1963). Litter builds up, and nutrients become unavailable to trees.

Deep litter fuels fires in dry climates. The burned organic matter releases nutrients to the soil, except for some nitrogen which is volatilized (Grier, 1975; Klemmedson, 1976; Chandler et al., 1983a; Covington and Sackett, 1986). Other disturbances such as windthrows or clearcutting accelerate decomposition and nutrient release to the soil by overturning the horizons and putting the organic matter in contact with more oxygen above and nutrient-rich soil horizons beneath. Such disturbances also allow the warmth of direct sunlight to reach the forest floor, thus increasing microbial activity, litter decomposition, and nutrient release (Ford, 1984; Binkley, 1986).

Overstory tree growth and vigor may decline as nutrients become tied up in the organic matter in the absence of disturbances in cool, moist areas (Heilman, 1966, 1968; Ugolini and Mann, 1979; Bowers, 1987). Extreme examples of the reduction in site productivity caused by nutrient tie-up in forest floor organic matter are seen in sphagnum moss layers, wetland bogs, and thick litter layers in Alaskan spruce-hemlock forests. The declining overstory permits more light and heat to reach the forest floor, which may lead to higher decomposition rates and nutrient availability. Often, however, sphagnum moss grows under declining overstories, ties up nutrients, and insulates the soil, thereby further reducing litter decomposition. Sphagnum moss obtains nutrients from rainwater and so continues to grow under these nutrient-poor conditions. This condition has creat-

ed upland bogs in Ireland, Scotland, Canada, Finland, Russia, and Alaska which have lasted for thousands of years.

Bogs also develop when microbial activity removes the oxygen from stagnant water and prevents decomposition of organic matter (or limits decomposition to anaerobic respiration). The wet bog fills with undecomposed organic matter, or a floating mat of vegetation may grow on its surface. This mat consists of sphagnum, ericaceous shrubs, and other shrub and tree species which grow under very nutrient-poor conditions.

### Temperature

Life processes for most animals and plants are restricted at slightly below 0°C (32°F) by the freezing of water and above 55°C (130°F) by the death of cells. Respiration of photosynthesizing and nonphotosynthesizing plants increases steadily through this range, although the rate of change varies with species. Gross photosynthesis, on the other hand, increases rapidly from the freezing point to a relatively constant "plateau" of photosynthesis within a narrow range of 8 to 18°C (55 to 75°F; Tranquillini, 1955; Nobel, 1976). The plateau level is species- and genotype-specific (Fryer and Ledig, 1972). Temperatures above the plateau create a decrease in net photosynthesis because of the increased respiration. The extremely high growth rates of forests in the cool, rainy Pacific northwestern United States have been partly attributed to the lack of summer heat, which may cause trees in warmer regions to respire away some of their potential growth (Franklin and Dyrness, 1973).

Tree species vary greatly in their ability to tolerate temperature extremes or fluctuations even though they vary little in their optimum temperature ranges for growth. At all higher elevations and at all but the most tropical latitudes, temperatures occasionally drop below freezing. Summer temperatures just above the soil surface can commonly exceed 65°C (150°F) in direct sunlight in most parts of North America even though ambient temperatures are much lower. Plants which cannot survive these extremes are found only in nonfreezing climates or where soil surface conditions are less extreme. Newly germinating seedlings are particularly susceptible to extreme temperatures because protective mechanisms and structures have not yet formed. Some plants avoid the extremes by completing their life or annual cycle in the spring after the frosts no longer occur and before the extreme temperatures of summer begin. Other plants endure the temperature extremes by becoming "frost hardened" (not to be confused with dormant; see Kramer and Kozlowski, 1979; Larcher, 1983) to low temperatures and by developing thick, insulating bark and other structures before summer temperatures reach extremes at ground level.

Different species and genotypes respond to changes in photoperiod and other environmental stimuli to different extents. They respond to changing seasons (Kramer and Kozlowski, 1979; Larcher, 1983; Kimmins, 1987). Different generations seem quite able to adapt to changing stimuli even though the responses are apparently inherited (Vaartaja, 1959).

### Oxygen

Oxygen is absorbed through bark lenticels, leaves, buds, and roots. Oxygen becomes limiting when not available to roots in the soil. As with other growth factors, most tree

species grow best when soil oxygen is optimum; however, some species have mechanisms which allow them to live in anaerobic soil conditions. Species such as tupelo and bald cypress can survive several years of standing water which kill most species within weeks by "pumping" air to the roots from the stem (Fowells, 1965). Other species, such as coastal redwood, cottonwoods, aspens, willows, and black spruce, avoid death when their root systems are buried in silt or organic bogs by developing adventitious roots from their stems. Still other species, such as northern white cedar, are able to live with a few roots near the surface of anaerobic waters in a condition of physiological drought.

### Carbon dioxide

Carbon dioxide is diffused from the atmosphere through stomata on leaves. Except when leaf stomata are closed to reduce water loss, absence of carbon dioxide does not limit growth. About 0.033 percent (by volume) of the atmosphere consists of carbon dioxide. Photosynthesis increases with increased concentrations of carbon dioxide, although species vary in their rate of response to an increase (Strain, 1978; Larcher, 1983). Carbon dioxide concentrations in the atmosphere vary slightly with time of day (Huber, 1958), weather conditions (Wilson, 1948; Selm, 1952), and elevation (Decker, 1947). On calm nights and mornings concentrations may reach levels 25 to 50 percent higher than normal close to the forest floor where respiring microorganisms are emitting carbon dioxide (Assmann, 1970; Woodwell and Botkin, 1970). These levels may allow understory herbs, shrubs, and trees to photosynthesize efficiently and survive at lower light intensities than they otherwise could.

### Other factors

Other environmental factors, such as atmospheric pollution and nuclear radiation, may affect growth. Species vary in their susceptibility to atmospheric pollution (Larcher, 1983).

The requirements for different growth factors change as plants grow larger. Some species can tolerate low light intensities during their first growing season, probably because they can live from stored food reserves in their seeds; however, many seedlings cannot tolerate water-saturated soils as well as older trees of the same species can. As trees age or otherwise decline in vigor, they become less able to adjust to irregular fluctuations in the environment or to tolerate adverse conditions such as atmospheric pollution or flooding.

### The Concept of Growing Space

Each tree in a forest utilizes the growth factors discussed above until its growth becomes limited by unavailability of one or more factors. Any one factor may limit growth because it is not present in the area, it has been taken up by another plant, or it is available at such a slow rate that it is essentially absent. When the limiting factor becomes available, growth will proceed until another factor becomes limiting, in a fashion similar to the *Law of the Minimum* concept of Liebig (Taylor, 1934; Odum, 1971). The availability of one factor can also influence the efficiency with which a tree can use another factor—the *Law of Compensation* (Assmann, 1970).

The limiting factor varies between areas and between times of the day, year, or longer in the same area. Lack of one factor may prevent a plant from acquiring another factor. For example, a lack of sunlight in an understory may reduce an understory plant's growth so that it cannot grow enough roots; water then becomes limiting, and the plant dies. Research has long been concerned with which factor is limiting (Tourney, 1929*b*; Korstian and Coile, 1938; Kozłowski, 1943). While resolutions of these ecophysiological questions are important, the study of stand dynamics can proceed by utilizing a simplistic generalization—provided the limitations of this generalization are recognized.

It is often convenient to consider that a site contains a certain amount of intangible *growing space*, or capacity for plants to grow until a factor necessary for growth becomes limiting. Growing space is similar to the *root capacity* of Coile (1937) and the *biological space* of Ross and Harper (1972) and Hutchings and Budd (1981). The term "growing space" avoids the tantalizing but distracting debate about which factor is limiting growth of an individual plant at a given site and time. Growing space is dimensional when growth is most limited by the volume of space available for shoot or root penetration or by the surface areas available for nutrients, water, or light accumulations. Growing space may also describe more abstract situations, such as when nutrient conditions limit the site's capacity to support growth.

#### Factors which limit growing space

The amount of growing space varies spatially and temporally. Some species are capable of utilizing growth factors in a form unavailable to other species. Such differences among species are not great but can give different species competitive advantages on different sites.

Different species survive and compete successfully under slightly different environmental conditions. It might be assumed that optimum conditions for growth are quite different between species and that the growing space is different for each species, even on the same area. In fact, the opposite seems true. Species vary little in their ability to grow under different availabilities of growth factors, so that what is growing space on a site is approximately the same for nearly all species.

Species' various competitive advantages under different conditions seem to lie largely in two characteristics:

1. Species vary in their allocation of photosynthate to shoot extension, root extension, height growth, limb spread, insect and disease resistance, and other uses. Consequently, species vary in their rate of obtaining growth factors, their stability, and their ability to resist adverse conditions.
2. Species vary in ability to endure low levels of certain growth factors, even though the amount of each growth factor which will produce optimum growth varies little among species.

The specific factors which can limit growing space are sunlight, water, mineral nutrients, temperature, oxygen, and carbon dioxide and have been described above.

### Variations in growing space between areas

The growing space of a given area can be considered general for all tree species rather than species-specific, since tree species vary relatively little in the required concentrations and forms of growth factors. The combinations of availability and unavailability of different factors give one or another species a competitive advantage at a given time and on a given site (Grubb, 1977). Different places vary dramatically in their amount of growing space. For example, dry areas with little growth potential may be adjacent to moist areas with much higher ability to support growth.

### Variations in growing space within a site

The growing space and limiting factors fluctuate on a site in response to daily and seasonal cycles and to unpredictable or long-term events such as storms or climate changes. Daily and seasonal cycles are so predictable that plants have physiologically adapted to cope with periods of good and poor conditions. Plants have adapted to less regular variations, such as fluctuations in the normal weather cycle, long-term climatic changes, disturbances, and forest development following disturbances, by asexual or sexual regeneration mechanisms. Changes in available growing space caused by plant interactions are referred to as "autogenic" changes (Tansley, 1935; Spurr and Barnes, 1980), while changes caused by events external to the plants are "allogenic" processes. Allogenic processes include weather and climatic changes.

**Daily changes.** Daily fluctuations in growing space follow a general pattern (Helms, 1965; Hodges, 1967) which varies somewhat depending on the severity of the climate and soils. The lack of light at night limits growth. Temperature may limit growth on cool sites during the early morning. High evapotranspiration demand (at midday) can cause stomatal closure and temporarily reduce photosynthesis. Midmornings can be optimum for growth when temperatures are moderate and soil moisture is available from dew or soil water migration during the night. Late afternoons can be favorable if water is not limiting.

**Seasonal changes.** Seasonal fluctuations in the growing space follow more varied trends than daily fluctuations. Seasonal fluctuations are regular enough, however, that seasonal physiological patterns of growth and organ development occur in many parts of the temperate zone. Cold temperatures generally limit growth in winter. Shoots are generally dormant, and root growth is very slow. All growth factors are generally available in early spring. Rapid root development occurs then, followed by budbreak, shoot and leaf growth, and cambial growth. Shoot growth can continue into summer for a short or long<sup>a</sup> time, depending on the environment and the species, as will be discussed later. Cambial growth can continue longer than shoot growth if growing space is adequate. Buds develop early or late in the season depending on the species. In the autumn, above-ground growth slows, and deciduous leaves develop abscission layers and fall; root growth increases for a while, after which trees lapse into a condition of deep dormancy and resistance to winter cold.

Figure 2.6 shows the variations of rainfall, temperature, and potential evapotranspiration for selected areas of the United States (from Eagleman, 1976). In each area, temper-

ature is the limiting factor for much of the winter. Where temperatures become high enough in winter, evergreen plants may photosynthesize, thus utilizing a part of the growing space unavailable to deciduous trees. Winter photosynthesis may explain the ability of some evergreen species such as eastern hemlocks, western hemlocks, and western redcedars to survive and grow quite large beneath deciduous overstories.

In early spring, most regions contain enough soil moisture (from snow, rain, or low winter evapotranspiration demand) and available nutrients to permit rapid growth when temperatures are high enough. Overstory leaves do not expand for several weeks after the temperatures rise in deciduous forests, so growing space at the forest floor is not limited by shade. Vernal herbaceous understory plants complete most of their life cycle during this short interval, tree seedlings germinate, and understory shrubs such as mountain laurel photosynthesize enough to survive in the understory.

Species vary in the time of budbreak and subsequent leaf emergence both between years on a given site and between sites, depending on weather conditions. Generally, however, species follow a certain order of budbreak. In the Pacific northwestern United States, conifers generally break buds slightly later than red alders do, while oaks generally delay breaking buds until 1 or 2 weeks after other hardwoods in the eastern United States.

Late spring offers optimal growing conditions for overstory trees in most regions. Growth is generally curtailed by a summer drought, increased evapotranspiration, or both. Summer rains or extended soil moisture may renew or extend the growing season in some regions, such as on good sites in the Pacific northwestern, southeastern, coastal Alaskan, and southern Rocky Mountain regions of the United States. A combination of moderate temperatures and available soil moisture may occur again in autumn, and this permits some understory herbs and tree species such as the white oaks to germinate. Active growth occurs in midsummer in cool areas where moisture is adequate (Zimmerman and Brown, 1971; Kramer and Kozlowski, 1979).

**Weather fluctuations.** Extremely wide fluctuations in seasonal weather patterns can be of such magnitude that trees are abnormally affected. Warm periods in early spring can melt snow or cause early growth and make plant roots or shoots vulnerable to later freezing. On the other hand, late spring frosts, snows, or lingering snowpacks can decrease the growing space available for spring herbs. Floods or standing water late in the spring kills less flood-resistant species. Late warm periods in the autumn or unexpected cold periods may also cause extra growth or death to some trees.

Droughts have a significant effect on both tree mortality and fire hazard. Greatest fire danger in hardwood forests is in spring and autumn when no leaves are on deciduous trees. Extended droughts are common in many forests in the western United States during midsummer, but unusually long ones make the stands susceptible to fire. Droughts also cause trees to die, especially when weak anyway. New shoot tips of species with "zigzag" growth forms (Chap. 3) die during droughts. Unusual summer rains increase the growing space previously limited by a lack of moisture and cause some species to add second, *lammis* flushes of growth.

Unusual weather patterns act as a disturbance in a stand (Chap. 4). They often cause a recognizable deformity in plant growth which can be used to reconstruct the stand's his-

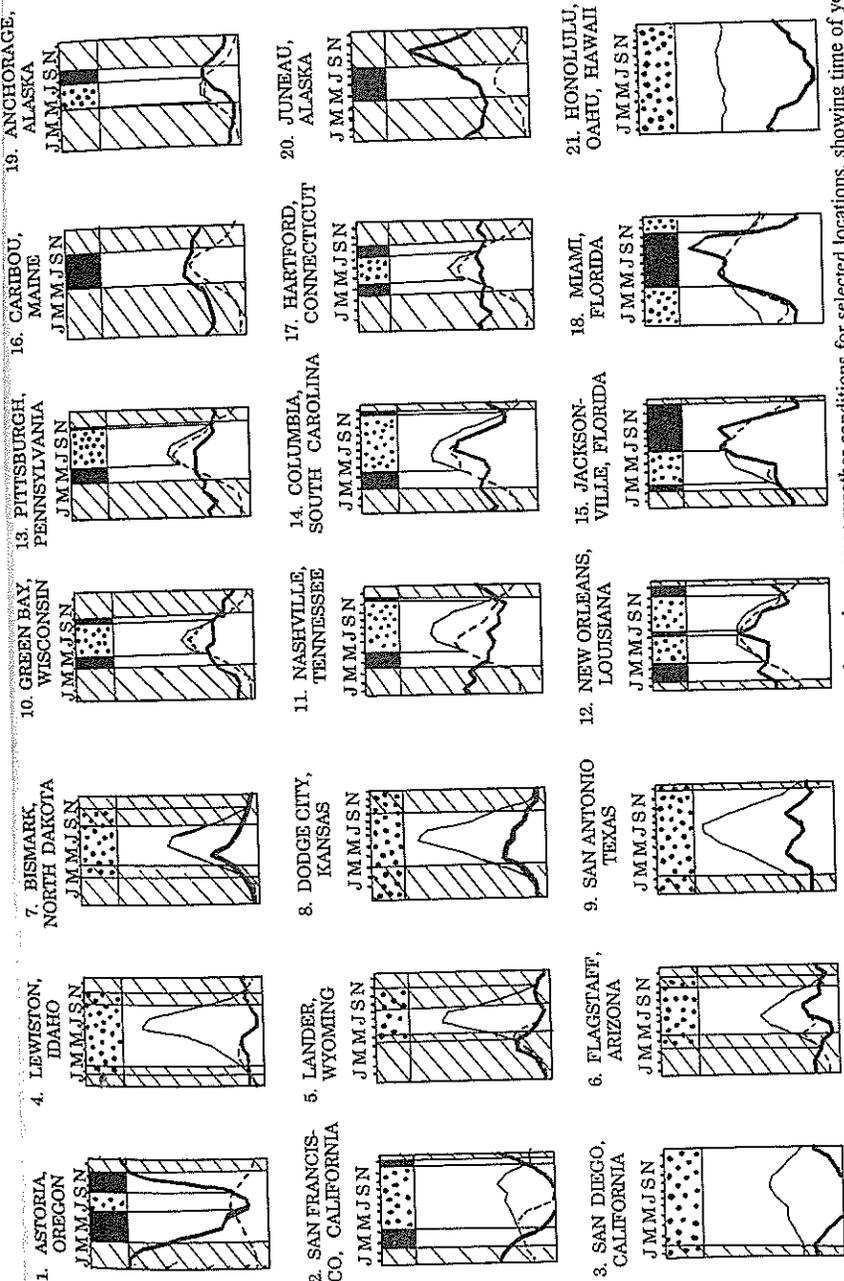


Figure 2.6 Growing space varies with time of year and climate influences, as shown by average weather conditions for selected locations, showing time of year when growth is restricted by freezing temperatures (striped bars) or lack of water (dots) for average weather conditions of selected locations. Adequate moisture and temperature are available for growth during times shown in black and at other times as weather conditions deviate from the average. Heavy crooked line = rainfall in inches; light crooked line = potential evapotranspiration; dashed line = actual evapotranspiration; vertical lines with stripes = times before average last freeze in spring and after average first freeze in fall. (Eagleton, 1976.) (See "source notes.")

*Photocopy*

tory. Abnormal weather can also cause different species to dominate the stand for many years or even many centuries afterward.

**Long-term climatic fluctuations.** The earth's climates fluctuate over decades and centuries and affect where species are and have historically grown and how vigorous they are. Climate fluctuations occur at shorter intervals than the life span of most trees. The fluctuations are attributed to changes in sea surface temperatures; changes in the extent of ice sheets (glaciers); changing patterns of solar radiation caused by the earth's orbital characteristics and sunspot activity; changes in atmospheric gases—both greenhouse gases and aerosols that cool—from natural causes such as volcanic eruptions and, recently, from increasing carbon dioxide and other human-caused pollutants in the earth's atmosphere (Heikkinen and Tikkanen, 1981; Heikkinen, 1982; Gilliland, 1982; Skinner and Porter, 1987; Gates, 1993; Wright et al., 1993). Longer-term fluctuations are associated with moving of continents and changes in the earth's tilt and orbit (Skinner and Porter, 1987).

Climates do not fluctuate uniformly throughout the earth, so the entire earth does not necessarily become warmer or cooler at the same time. Similar climatic fluctuations can occur in different regions, although sometimes at slightly different times. Parts of the earth reached a peak of warmth in the mid-1930's (A.D.), which had not been exceeded for thousands of years.

The period from early 1400's (A.D.) to the mid-1800's A.D. is known as the "little ice age" and may have been a global event (Gates, 1993). Glaciers in many parts of Europe, North America, and Asia began to expand. Villages at high elevations in Europe were abandoned, vineyards were moved to lower elevations, and people were considering abandoning settlements in Iceland because wheat could not be grown there (Lamb, 1963, 1977, 1988). "It was as if the countries of Europe had moved 300 miles to the north." (Gates, 1993).

Trends of mean annual temperatures for northwestern Europe are shown in Fig. 2.7. Differences of a few degrees become more important when one realizes the differences in mean annual temperatures are only 5 to 6°C (10°F) between Atlanta and Washington, D.C.; between Washington, D.C., and Brunswick, Maine; between Sacramento, California, and Spokane, Washington; and between St. Louis, Missouri, and Denver, Colorado (Eagleman, 1976).

In the short term, climatic trends are difficult to detect because weather fluctuations within these long-term trends are often large and mask any longer trend. Several cool and warm periods have been identified for northwestern Europe (Lamb, 1963, 1977; Hansen et al., 1981; Henderson and Brubaker, 1986; Skinner and Porter, 1987). These patterns are similar to some parts of North America (Gates, 1993):

1. *Postglacial climatic optimum warm epoch.* This period reached a maximum about 6000 to 3000 B.C., with generally the warmest conditions since the glaciation.
2. *Postglacial cool periods.* Early iron age cold epoch about 1000 to 500 B.C. and another cool period about 500 to 1000 A.D.

3. *Little climatic optimum (Medieval optimum)*. This period reached its maximum about 900 to 1200 A.D., also with conditions nearly as warm as those of the Postglacial climatic optimum.

4. *Little ice age*. This cooler period reached its maximum about 1430 to 1850 A.D.

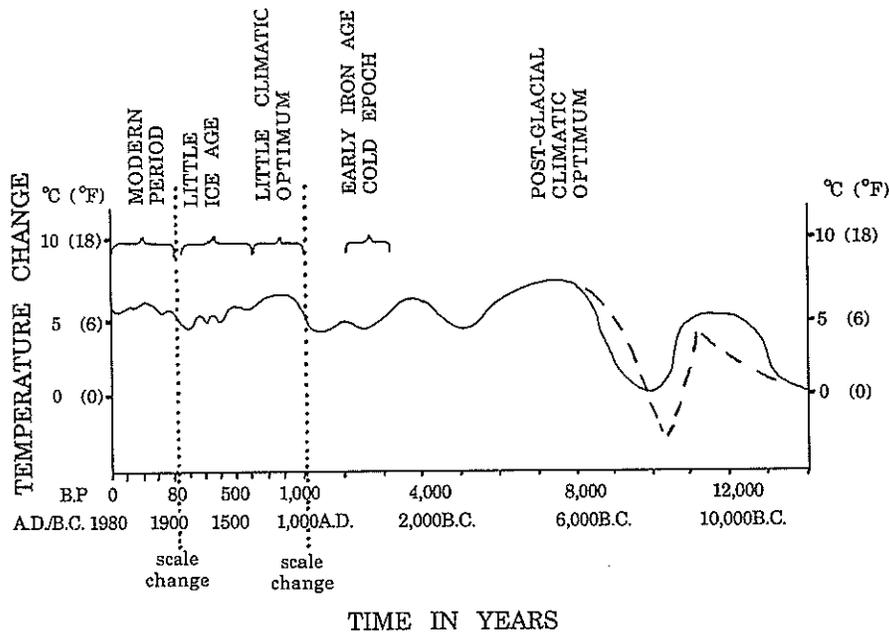


Figure 2.7 Average temperature variation in northwestern Europe since the last glaciation (from Lamb, 1977). Global climatic conditions have not been stable and have altered growing space and the species which are most competitive on a site. The patterns may change with different regions of the world. Dashed lines on right show a recent possible interpretation.

5. *Modern period*. The earth's climate generally warmed from about 1850 until a peak in the 1930s. Between about 1945 and 1970 the earth's climates appeared to be cooling again. Because of the daily and annual fluctuations, discerning a trend since 1970 is difficult. Much of the concern that atmospheric pollution will cause global temperature increases apparently has not been borne out to date.

Both temperature and precipitation patterns shift as the climate fluctuates. During a cool period the moist subtropical region may contract while the upper latitudes may become cooler and drier, although the pattern varies depending on location on the continental masses.

The effect of climate variations on forests can be dramatic but not immediately obvious (Franklin et al., 1971; Henderson and Brubaker, 1986; Brubaker, 1988, 1991; Gates, 1993). Most trees initiate in a stand shortly after disturbances. The climate during the

first few years is a large factor in determining which species will become dominant; but once in a dominant position, a tree can endure quite large climate changes. Species which live hundreds of years may be surviving in a stand because they had a competitive advantage when the climate was quite different. Foresters prescribing species to plant in a harvested area sometimes mistakenly assume that the species dominating the previous stand would best survive if reestablished. Actually, the species growing on an area may be a relic of a past climate, rather than a key to present climatic conditions. Relic stands may be especially common in mountainous terrain since a given temperature and precipitation regime rapidly moves up and down a mountainside as the global climate fluctuates.

Plant species are continually migrating. Since tree species generally invade an area after a disturbance, the migration is often extremely slow. Stand-initiating disturbances occurred only every 100 years or more in North America before European colonization. Most tree seeds are disseminated less than a few miles. Tree migration onto and across deglaciating areas does not appear to have been more rapid than contemporary migration across nonglaciating areas in response to the changing climate.

The climatic fluctuations have also changed the physical landscape dramatically. During the glacial maximum—about 20,000 years ago—most of Canada and some of the United States were under a sheet of ice, the sea level was about 110 meters (m) [360 feet (ft)] lower, and the Atlantic coast was as much as 145 kilometers (km) [90 miles (mi)] further eastward (Shepard, 1963; Emery, 1967; Skinner and Porter, 1987). Suitable locations for plant growth changed dramatically as ice advanced and retreated, climates cooled and warmed, and seas fell and rose (Wright, 1968; Whitehead, 1972). Species which did not move to suitable areas became excluded or extinct during the changes. The paucity of species in central Europe compared with either North America or Asia Minor has been attributed to the inability of species to migrate over the Alps during the various weather fluctuations and glacial advances and retreats. According to one hypothesis, east-west pattern of the Alps formed a barrier to migration during climatic changes in Europe. The north-south directions of mountain ranges in North America allowed much more southerly movement of species as the glacier advanced, and the southerly latitudes of Asia Minor and its high plateau surrounded by water created ice-free environments for many different species. In central Europe, there are three or four native species of oak trees and a total of about 35 commercial tree species. There are about 60 native species of oak trees in North America and over 120 commercial tree species altogether (Harlow et al., 1979). In Asia Minor there are 18 native tree species of oak (Yaltirik, 1984) and over 60 commercial tree species in all (Davis, 1965).

#### **Variations in growing space caused by disturbances**

A disturbance causes changes in growing space in two ways: it can eliminate the existing plants on an area, making growing space available to other plants, and it can alter the total amount of growing space available to all plants by altering the availability of water, nutrients, or oxygen.

Disturbances which lead to soil erosion or soil compacting reduce the total growing space within the soil by reducing its moisture-holding capacity, volume where roots can penetrate, and oxygen and nutrient availability. Alternatively, disturbances such as

windthrows overturn the soil and incorporate organic matter into the soil, break up potential hardpans, and thus increase the availability of nutrients, moisture, and oxygen to roots. Similarly, soil deposition can increase the nutrients available to the site although initially the existing root systems may suffocate. The heat from direct sunlight on the exposed forest floor may increase microbial activity and thus nutrient availability following a disturbance. Fire may increase the availability of certain nutrients by burning the organic matter in which they were previously incorporated. Fires may also reduce growing space in soils if most of the moisture retention and cation exchange capacity is in the organic matter.

### **Changes in growing space during forest development after a disturbance**

When a disturbance kills a plant, it makes available the growing space which was previously occupied by this plant. After a disturbance, plants expand to reoccupy the newly available growing space. As the plants develop, they extend roots and branches and produce leaves to utilize the available light, moisture, nutrients, warmth, and other growth factors. Consequently, the amount of unoccupied growing space diminishes even if the total amount of growing space remains unchanged.

Both the occupied and unoccupied growing space can change as a forest develops. A growing stand can actually expand the amount of moisture available as tree roots penetrate the mineral soil and expand pore space for moisture retention, as occurred when forests regrew on abandoned farmlands in the Piedmont of the southeastern United States (Kittredge, 1952; Gaiser, 1952). Stands in coastal fog areas may increase their available moisture as they grow by providing branches and leaves on which the fog can condense and drip to the ground. Clearcutting Douglas-fir stands in the fog belt of the Pacific northwestern United States can reduce the moisture reaching the forest floor.

Soil oxygen and available nutrients similarly increase as the depth of optimum soil pore space increases. Nutrient availability increases as roots, microorganisms, and the soil solution take up nutrients from the rock lattices and circulate them within the tree and soil.

Total nitrogen in the plant-soil system increases as a stand grows, since more nitrogen is fixed from the atmosphere. Plants such as legumes and alders with nitrogen-fixing capabilities increase the rate at which nitrogen accumulates in the system.

Especially in cooler or drier climates, total growing space may actually decrease if a forest stays too long without a disturbance and the nutrients become tied up in the very slowly decomposing organic matter.

Temperature regimes also change as a forest develops. The rooting zone cools in very northerly climates with the resulting tie-up of nutrients, decline of forest growth, and eventual development of bog conditions. Immediately following a disturbance, sunlight directly on the soil may create warm temperatures and allow heat-tolerant species to initiate. As the stand grows, shade cast on the ground creates cooler conditions again and individuals less tolerant to the heat may grow.

The decrease in evapotranspiration immediately after a disturbance can cause saturation and anaerobic soil conditions. More water is transpired as the new stand develops, and the depth of suitable soil for rooting can again increase.

### Growing space available to each plant

It is now possible to describe a scenario of tree growth within a stand. When growing space (i.e., the sum of factors necessary for growth) is present but not occupied by other plants, the growing space can be considered "available." This occurs when a flowerpot is filled with soil, seeds are added and watered, and the pot is placed in the sun; when a moist field is newly plowed; or when a disturbance kills trees or parts of trees.

Plants which have germinated, been planted, or survived the disturbance expand into the available growing space. The rate of this expansion is limited by the availability of growth factors and by the genetically predetermined growth rates of the species.

The expanding plants come literally or figuratively into contact with others also expanding into the available growing space. After contact, the rate of growth of each plant is limited by the growing space it occupies. The amount of growing space each plant occupies is defined by the surrounding plants.

Because of their unique anatomies, plants must expand in size to live. A plant first allocates the energy obtained through using its available growing space to maintain its presently living cells (*maintenance respiration*; Assmann, 1970). After respiration demand is fulfilled, any extra energy is used for growth. A tree occupying a fixed growing space increases in size at progressively slower rates, because it obtains a fixed amount of energy through photosynthesis, while increasing amounts of energy are allocated to maintenance respiration demands of the increasingly larger living system. Size eventually reaches a maximum in a fixed growing space when all photosynthesis is used for respiration. The tree cannot grow larger unless its growing space is increased.

The above scenarios are shown graphically in Fig. 2.8. Together, the figure shows the fundamental considerations for tree growth: tree size, growing space per tree, and time. [To be compatible with later discussions (Chap. 15), the growing space axis has been reversed to read from large to small values.] When a tree begins growth (e.g., from a seed), it expands in amount of growing space along XY, beginning at X. At some point (e.g., c), the growing space becomes limited, and the plant expands in size at this growing space (along cC). If it occupied more growing space at the time growing space became limited (e.g., b), it would grow larger. Eventually, tree size reaches an upper limit for each amount of growing space. Empirical studies (Yoda et al., 1963; White and Harper, 1970; Drew and Flewelling, 1977, 1979) have shown the upper limit of growing space to follow a relation of approximately

$$\text{Tree size} = K (\text{growing space})^L$$

so that the slope of the upper limit is  $L$  when both axes are logarithmic.  $K$  is a species-specific constant. In trees growing in full sunlight,  $L$  has a value of approximately  $-3/2$  (White and Harper, 1970; Ford, 1975; Lonsdale and Watkinson, 1983; Westoby, 1984; Weller, 1987; Osawa and Sugita, 1989). Reasons for this slope and the relation of growth to time, volume per tree, and growing space will be discussed in Chap. 15.

When plants have filled all available growing space, they begin competing with other plants to obtain and to maintain growing space. The varied ways the different species

survive and grow allow a species to have an advantage and hence expand into another's growing space under certain conditions but to give it up under others.

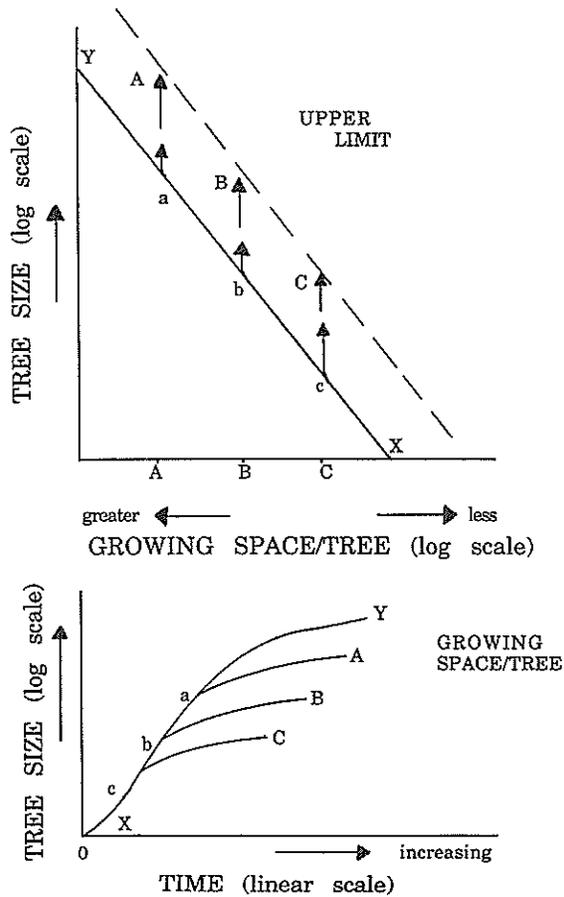


Figure 2.8 A tree growing without competition will increasingly occupy growing space and grow in size along line XY. Trees encountering competition at points a, b, or c increase in size along aA, bB, or cC, respectively, with limited growing space until an upper size limit is reached for that amount of growing space (this concept will be discussed in more detail in later chapters).

If one plant has a competitive advantage, it expands at the expense of another. The plant whose growing space is reduced may be able to survive if it can utilize some growing space which the more aggressive plant cannot, or it may die if there are no such differences in growing space utilization. Plants of the same species utilize the same growing space, and so a plant soon dies if outcompeted by another of the same species.

Different species sometimes have slight differences in growing space requirements, and an individual can survive even if outcompeted by a plant of another species. For example, red alders often outcompete western hemlocks and Douglas-firs for sunlight by growing above them, expanding their crowns, and shading the other species. The hemlocks survive beneath the alders because they can live with lower light intensities than the lowest foliage of the alders can; however, the Douglas-firs die beneath the alders because the alders and Douglas-firs utilize sunlight to the same minimum levels of intensity (Stubblefield and Oliver, 1978).

The different growth behaviors which give a species an advantage are sometimes referred to as "strategies." This term implies anthropomorphic preplanning which is inappropriate for trees (Gould and Lewontin, 1979; Harper, 1982). Much has been written about the theoretical aspects of competition and strategies which is beyond the scope of this book (Slobotkin, 1961; Harper, 1977; Grime, 1979).

### **Diversity and Stability in Plant Communities**

The growth factors required by trees are inorganic; consequently, trees are not dependent on other living organisms for immediate survival. Tree species may form mutualistic associations with certain lower plants—fungi or bacteria—in which a coevolved interdependence is probable. Less immediate mutualistic interdependencies also seem to form between tree species and animals, especially involving pollination, seed dissemination, and sometimes germination.

Although increased species diversity is sometimes assumed to imply stability (Whittaker, 1965; Brookhaven National Laboratory, 1969; May, 1973), the lack of organic dependencies of trees makes interactions between trees much different from interactions between animals. Animals exist in a food web, where each animal feeds on other animals or plants. These animals are dependent on others for their energy source and certain organic vitamins. Species diversity in animals is critical for survival and community stability, since the elimination of one animal or plant may jeopardize the food source (and hence survival) of many predator animals unless other species are present as substitutes (Hutchinson, 1959). Conversely, all trees live at the "bottom" of the food hierarchy. The lack of other trees or animals does not destabilize a tree's food supply. Other plant and animal species do probably add stability by not providing the continuity of food of a single species to a predatory pathogen or animal, by aiding in seed dispersal and pollination, and perhaps in other ways; however, the relationship between diversity and stability is not so close as in animal communities.

### **Applications to Management**

Concerns that human manipulations cause unalterable changes to the natural processes of forests do not seem well founded. Human activities appear less drastic when people realize that forests are casual, temporary assemblages of plants which are not closely coevolved and which compete vigorously with each other and are constantly subjected to disturbances. Human activities basically mimic different aspects of natural disturbances.

Use of "indicator species" to identify growth potential of a site needs to be adjusted for disturbance history, since different species can dominate depending on which gains the competitive advantage following a disturbance (O'Hara, 1995). Indicator species are

most useful at extreme site conditions. Here, a species' presence indicates that conditions are not too extreme for it to survive, although absence does not indicate that the species could not grow there.

Moving a species to more severe sites than where it is naturally found can make it susceptible to insects, diseases, and weather disturbances. Where no barriers to migration exist but a species is not found in an area, it is usually because climate or soil conditions prevent its successful growth. Alternatively, a species may be able to grow successfully in another part of the world but has been unable to migrate there.

Trees react to silvicultural manipulations according to the physiological and morphological characteristics of the species. To maintain conifers and other site-insensitive species on good sites requires intensive management activities and large costs. Likewise, a site-sensitive species can often be grown on a poor site, but the reduction in growth and susceptibility to insects and diseases may not allow them to survive.

Much of silviculture is either making the stand's growing space available to desirable species and individuals or putting these individuals in a competitively advantageous position. Elimination and continuous exclusion of all plants except crop trees, although giving most rapid growth of crop trees, is rarely done in North American forestry because of the high cost compared with the value of wood. Various thinning and regeneration practices give the competitive advantage to desirable species. Partial shade of shelterwoods often gives a desired species the advantage over competitive weeds until the desired species grows large, after which it can be released to full sunlight.

Management activities also increase or decrease the total growing space of an area. Timber harvesting operations and site preparations can decrease total growing space when they damage the soil structure or reduce nutrients by causing them to be leached, volatilized in the case of fire, or taken from the site during harvest.

Management activities can increase the total growing space by fertilization or site preparation which increases soil rooting depth or reduces unfavorable microsites.

Changing the growth factors on a site sometimes creates management problems. Nitrogen fertilization increases needle biomass and length of needle retention of Douglas-firs. If the fertilized trees have small diameters and are not stable anyway, the added weight on the crown increases the stress on the bole and can cause breakage especially in areas of heavy, wet snows.

Management activities should be timed to utilize periodic fluctuations in growing space. Planting when roots are dormant in late autumn, winter, or early spring not only prevents damage to rapidly growing root tips, but establishes the seedlings when water is plentiful and the temperature is low. Growing space is less likely to be limited by a lack of moisture. Where advance regeneration is to be saved, the overstory is best not removed in late spring, after the newly developed shoots have formed shade needles which will be subjected to full sunlight during the droughty, hot summer.

Mortality from climatic changes is most likely when the trees are in the seedling stage. Later in life the trees can also die, especially if they are otherwise under stress. Recognition of climatic change trends allows conservative managers not to establish species in stands near historically cooler or warmer extremes of their ranges, since these sites may not be suitable for the duration of the trees' lives. Reestablishing the same

species on a site where it formerly dominated also may not be successful, since the previous stand may have become established under a much different climatic regime.

Increased competitiveness of a species at an extreme of its range can suggest the species is responding to a change in climate—a warming climate where the increase is at the cooler and higher elevations, a cooling climate where the increase is at the cooler and lower elevations, a drier climate where the increase is at the wetter extreme of its range, and a wetter climate where the increase is at the drier extreme of its range.

In general, younger stands are more adapted to the current climate, since climatic shifts occur gradually. A decline in vigor of a species in many old stands at an extreme of its range often indicates a significant climate change. This decline in vigor can be accompanied by insect attacks and mortality.

Simply moving all species to higher and lower elevations and expecting them to behave as they did before may not be an effective response to changing climate, since different species will become more or less vigorous under the changed climate. New or accentuated variations in the patterns of interaction among species can be expected (Davis, 1986).

**Lynx Incidental Capture Report**

**Report No. 2012-TRP010**

**Lynx ID: LIC29**

**Name of Individual Reporting Capture:** [REDACTED]

Trapping for IFW deer yard predator program

**Name of Biologist/Warden Responding to Report:** Wdn Kevin Pelkey, Biologists Jennifer Vashon and Rich Hoppe. Drs. Stuart Sherburne and Rachel Emerson, DVM

**Type of Capture:** Trap

*Set type:* Dirthole

*Trap type and size:* #3 offset

*Jaw spread and swivels:* 5 3/8" and 2 swivels

*Staking:* drag

*Bait:* Yes;

*Lure:* Yes

*Visibility of Bait:* Yes - bone

*Legal Set?* No, summonsed for violation (exposed bait)

**Location of Capture:** TC R2 Wels (spur rd off Shawcamp Rd)

**Wildlife Management District:** 6

**GPS Coordinates (UTM preferred):** 576696, 5125588

**GPS Map Datum (NAD 83 preferred):** NAD83

**Date of Capture:** 11/7/12

**Disposition of Lynx:** Alive, sedated, and released on site

**Age/Sex:** male 31.5 lbs

**Description of events**

**Response:** At 1137 on 11/7/2012, a trapper called the lynx hotline to report the capture of a lynx in TCR2 Wels. Wdn. Pelkey, biologists Jennifer Vashon and Rich Hoppe, and Drs. Stuart Sherburne and Rachel Emerson DVM responded. USFWS Special Agent Eric Holmes was notified of the capture. Wdn. Pelkey checked the set, interviewed the trapper, and summonsed the trapper for exposed bait. The lynx was sedated, examined for injuries, provided supportive care and released from the trap onsite.

**Weather conditions:** Daytime temperature was 35 degrees F with clear skies. Overnight temperature was in the mid 30s.

**Disturbance:** No vehicle traffic when staff was onsite.

**Assessment of the lynx:** The lynx was in a trap at the edge of a road among young regenerating conifer trees. The chain and drag had been secured around trees, which limited the animal's mobility and provided some cover. The lynx was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, torso, were found to be normal and extremities were found to be abnormal (two small laceration <1/4" on lateral aspect of p5 and palmer of p4 on right front capture foot and mild swelling). Lacerations were through the first layer of skin.

The animal was treated with antibiotics and subcutaneous fluids supportively; wound care consisted of thorough irrigation and topical treatment of aluspray. Body temperature was normal. The animal was a healthy male and weighed 31.5lbs. Dr. Sherburne concurred with our injury assessment and treatment, and noted that the lacerations were minor. Body measurements and DNA were collected and the animal was marked with yellow eartags in each ear. The lynx was given an injection of yohimbine to reverse the effects of the sedative (xylazine) and observed during recovery in a portable dog crate. Upon recovery, the animal was observed putting weight on the capture foot as it walked away from the site.

See attached check list for reporting lynx captures and WS Incident Card for more information.

Report prepared & updated by: Jennifer Vashon 11/13/12 and 11/19/12  
Report reviewed by: Rich Hoppe 11/19/12 and Kevin Pelkey 11/19/12

# Call For Service

CFS Number: **WS12-015575**  
Date: **11/7/2012 12:09:22 PM**

## Call For Service

---

|                  |                              |                  |                                             |
|------------------|------------------------------|------------------|---------------------------------------------|
| CFS Number       | <b>WS12-015575</b>           | Complainant      | <b>[REDACTED]</b>                           |
| Date             | <b>11/7/2012 12:09:22 PM</b> | Address          | <b>Tc R2 Wels</b>                           |
| Dispatcher       |                              | City, State, Zip |                                             |
| Call Source      | <b>0 - Phone</b>             | Phone            |                                             |
| Received         | <b>12:09:58 PM</b>           | Call type        |                                             |
| Dispatched       | <b>12:10:04 PM</b>           | Reported Offense | <b>6780 - Endangered/Threatened Species</b> |
| Arrived          | <b>12:00:00 AM</b>           | Verified Offense | <b>6891 - Trapping - Criminal Violation</b> |
| Cleared          | <b>5:14:38 PM</b>            | Tow Company      |                                             |
| Location         | <b>Tc R2 Wels</b>            | Vehicle          |                                             |
| City, State, Zip | <b>TC R2 WELS</b>            | Vehicle License  |                                             |
| Jurisdiction     | <b>W14 - Section 14</b>      | Disposition      | <b>3 - Pending Approval</b>                 |
| Grid             | <b>02752 - TC R2 WELS</b>    | Priority         |                                             |
| Sector           |                              | Classification   |                                             |
| Map              |                              | Agency           | <b>MWS - Maine Warden Service</b>           |
| X Coordinate     | <b>0579295</b>               | Case             |                                             |
| Y Coordinate     | <b>5129890</b>               | Reviewed On      |                                             |
| Reviewed By      |                              |                  |                                             |

### Officers

11981 - Pelkey, Kevin

Notes 2256//START ME A CARD FOR A LYNX CAUGHT IN A TRAP IN TC R2. I WILL PROBABLY BE ON THIS FOR A COUPLE OF HOURS. LOCATION IS OFF SHAW CAMP RD.  
Original Location : T C R 2

2256 Pelkey, 60 miles, 6 hrs. I responded to the scene of a lynx captured in a foot hold trap. I met with the trapper who brought me to the scene. I stood by, securing the area until wildlife biologist staff arrived and sedated the animal. I inspected the trap sight and found exposed bait. I interviewed the trapper and summoned him for the violation. See WS12-M5332

# Check List for reporting and responding to an incidental capture of a lynx

## 1. Obtain information from CALLER

Date 11/7/2012 Time 1151 IFW Staff collecting caller info: \_\_\_\_\_  
 Trapper/Individual Reporting \_\_\_\_\_  
 Address \_\_\_\_\_ Phone number: \_\_\_\_\_

Circle all info that applies

Type of trap? **Foot-hold** Conibear When was trap last tended? 11/6/2012  
 Animal still in trap? **Yes** No Is animal entangled? Yes No  
 Lynx injured? Yes No  
 Animal's Behavior **Calm** Sleeping Pacing

Disturbance at the site? Yes No Other: \_\_\_\_\_  
 Vehcile traffic Human disturbance Equipment operation Animal disturbance  
 \*advise caller to minimize disturbance to the animal \*

Current weather? **Clear** Rain Snow Windy Current temperature? 36  
 Overnight weather? **Clear** Rain Snow Windy Overnight temperature? \_\_\_\_\_

Directions and meeting time:

## 2. Contact IFW lynx hotline 592-4734 to inform lynx specialist/ Mammal Group

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. Inforamation when ON-SITE: Circle all inforamaiton that applies

Size of trap #1.75 #2 **#3** 110 120 160 220 Other: \_\_\_\_\_  
 Inside jaw spread 5 3/8 inches Number of Swivels? 2  
 Jaw type Padded Laminated **Offset** Legal Set? Yes **No** All people present  
 Securing method Staked **Drag**  
 Bait? **Yes** No **Visible?** **Yes** No?  
 Lure? Yes No **Type:** Town  
 Town: \_\_ TC R2 \_\_\_\_\_ 4 \_\_\_\_\_  
 Location: \_\_\_\_\_ Woods Rd \_\_\_\_\_ 5 \_\_\_\_\_  
 GPS coordinates N 46 16.7719 W068 00.2686 \_\_\_\_\_ 6 \_\_\_\_\_  
 GPS datum **WGS84** NAD27 NAD83 \_\_\_\_\_ 7 \_\_\_\_\_

## 5. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation? Yes No  
 Unresponsive? Yes No  
 Broken bones? Yes No **If yes,** Compound non-compound  
 Bleeding? Yes No **If yes,** minor Major  
 Laceration? Yes No **If yes,** superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes No

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured? Y/N Euthanized? Y/N Taken to rehab. Center? Y/N  
 Name&Location of Rehab Center \_\_\_\_\_ Phone # \_\_\_\_\_

Comments:

# Check List for reporting and responding to an incidental capture of a lynx

## 1. Obtain information from CALLER

Date 11/7/12 Time 1137 IFW Staff collecting caller info: J. Vashon  
 Trapper/Individual Reporting [Redacted]  
 Address [Redacted] Phone number: [Redacted]

Circle all info that applies

Type of trap?  Foot hold  Conibear  
 Animal still in trap?  Yes  No  
 Animal's Behavior  Calm  Sleeping  Pacing  
 When was trap last tended? Yesterday  
 Is animal entangled?  Yes  No  
 Lynx injured?  Yes  No

Disturbance at the site? Yes  No   
 Vehicle traffic Human disturbance  
 Other: off on side of road - no traffic when staff on scene  
 Equipment operation Animal disturbance

\*advise caller to minimize disturbance to the animal \*

Current weather?  Clear  Rain  Snow  Windy  
 Overnight weather?  Clear  Rain  Snow  Windy  
 Current temperature? 34°F - Sunny  
 Overnight temperature? \_\_\_\_\_

Directions and meeting time: 1 Shaw Camp Rd - TCR2 Welo  
→ left on Shaw Camp Rd, 1st left on Shaw Camp Rd 1/2 mile on left

## 2. Contact IFW lynx hotline 592-4734 to inform lynx specialist/ Mammal Group

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. Information when ON-SITE: Circle all information that applies

Size of trap #1.75  #2  #3  110  120  160  220 Other: \_\_\_\_\_  
 Inside jaw spread 5 3/8 inches  
 Jaw type Padded  Laminated  Offset   
 Securing method Staked  Drag  - cabled to a tree  
 Bait?  Yes  No Visible?  Yes  No? bone  
 Lure?  Yes  No Type: \_\_\_\_\_  
 Town: TCR2  
 Location: Sev Rd off - Shaw Camp Rd  
 GPS coordinates 576696 E 5125588 N  
 GPS datum  WGS84  NAD27  NAD83

All people present  
 1 Wdr. Pelkey  
 2 Jen Vashon  
 3 Rich Hopper  
 4 Steve Shabana DVM  
 5 Rachel Emerson DVM  
 6 \_\_\_\_\_  
 7 \_\_\_\_\_

## 5. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation?  Yes  No  
 Unresponsive? Yes  No   
 Broken bones? Yes  No  If yes, Compound non-compound  
 Bleeding? Yes  No  If yes, minor Major  
 Laceration? Yes  No  If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes  No

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured?  Y  N Euthanized?  Y  N Taken to rehab. Center?  Y  N  
 Name & Location of Rehab Center \_\_\_\_\_ Phone # \_\_\_\_\_

Comments: Initially the trapper reported that he thought the cat was in one of his #2 Dole cables to tree but it was a #3 on a drag.

Wdn. Pelkey

S. Sherburne

### Incidental Lynx Capture Form

Lynx ID# LIC 29

DATE: 11/7/11

Observers: J. Vashon, P. Hoppe, R. Emerson

Recorder: JAV

Town: TCRA Wells

Road Name: Shawtown Rd

County: AROOSTOOK

Time when manageable: 1532  
Time of recovery/ release: 1650

UTMe 576696 UTMn 5125588 Datum: WGS84 NAD27 NAD83

| Mix Used:            | Ketaset Concentration: | Xylazine Concentration: | 5:1 Ket/Xyl Concentration: | Time        | Delivery Method     | Additional Drug (If Needed)     | Amount     |
|----------------------|------------------------|-------------------------|----------------------------|-------------|---------------------|---------------------------------|------------|
|                      | <u>100 mg/ml</u>       | <u>100 mg/ml</u>        |                            |             |                     |                                 |            |
| 1 <sup>st</sup> Dose | <u>0.9</u> m l         | <u>0.18</u> m l         | m l                        | <u>1520</u> | <u>Syringe Pole</u> | Antibiotic (SCorIM) 0.5cc/10lbs | <u>1.5</u> |
| 2 <sup>nd</sup> Dose | <u>0.3</u> m l         | m l                     | m l                        | <u>1534</u> | <u>hand</u>         | Yohimbine (IVorIM) 0.5cc/20lbs  | <u>0.5</u> |
| 3 <sup>rd</sup> Dose | m l                    | m l                     | m l                        |             |                     | Midazolam (IVorIM) 0.5cc/slowly |            |
| 4 <sup>th</sup> Dose | m l                    | m l                     | m l                        |             |                     | Epinephrine (SCorIM) 0.5cc/10lb |            |
| Comments:            |                        |                         |                            |             |                     | Doxapram (IVorSL) 1.0cc/22lbs   |            |

Fluids sc 350ml

Ear Tag#(Left) 228 (Right) 228 Tag Color: Yellow Green Red Other: \_\_\_\_\_

Radio Collared: Y N Initial/Previously Collared Collar Works: Y N Make: LT Sirtrack ATS GPS SAT VHF

Radio Collar Frequency: \_\_\_\_\_ Replacement Collar Freq.: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months

Leather Circumference: \_\_\_\_\_ mm

**PHYSICAL INFORMATION**

Sex: M F Year Born(if known) \_\_\_\_\_

Estimated Age: Kitten Subadult Adult

Teeth: Normal  Missing  Broken  Worn   
Describe: \_\_\_\_\_

Photo of Teeth? side view (2) \_\_\_\_\_ front view \_\_\_\_\_

Coat Condition: Prime  Summer   
Shedding  Mange  Bare/Worn

Capture Foot? Front: L, R or Hind: L, R  
Capture Foot Injuries? Y N  
Describe: See assessment

**Subjective Body Condition:**  
Poor  Fair  Good  Excellent

**Objective** Normal Abnormal

Eyes/Ears

Nose/Mouth

Neck/Torso

Skin

Extremities

Assessment: outside middle -  $\approx$  1/4" 2 lacent lateral aspect of p5 palmar p. 4

Plan: Release/no sedation, Euthanize  
Sedation: Treat in field, or Transport to Vet;  
irrigate, a/luspray, antibiotic

Mark abnormal area below:

**Normal - 101-102.5**

| Body Temp     | Time        |
|---------------|-------------|
| <u>99.8</u> F | <u>1540</u> |
| <u>99.4</u> F | <u>1554</u> |
| F             |             |
| F             |             |
| F             |             |

**BODY MEASUREMENTS**

|                             |                 |                      |                         |              |              |              |
|-----------------------------|-----------------|----------------------|-------------------------|--------------|--------------|--------------|
| Weight (Actual or Estimate) | <u>31.5</u> lbs | Tail Banding Pattern | <u>No Bands</u>         | 1 Band       | 2 Bands      | 3 Bands      |
| Neck Circumference          | mm              | Color of tip of tail | <u>Completely Black</u> |              |              |              |
| Chest Girth                 | mm              | Hind Foot Coloration | Dark Brown              | <u>Grey</u>  | Other: _____ |              |
| Shoulder Height             | mm              | Toe Coloration       | Inside                  | Middle       | Middle       | Outside      |
| Tail Length (tip of bone)   | mm              | Left Front           | <u>Brown</u>            | <u>Brown</u> | <u>Brown</u> | <u>Brown</u> |
| Tail Length (tip of tail)   | mm              | Right Front          | "                       | "            | "            | "            |
| Total Length                | mm              | Left Rear            | "                       | "            | "            | "            |
| Zygomatic Arch              | mm              | Right Rear           | "                       | "            | "            | "            |
| Ear Tuft Length             | mm              |                      |                         |              |              |              |

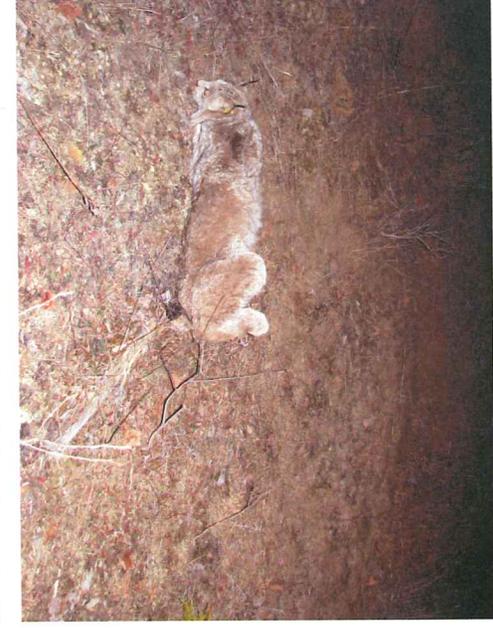
Scars: Y N Description top left ear - small 1/4"

DNA: Hair Sample Y N Tissue Sample Y N Blood Sample Y N

Parasites: Y N Sample: Y N Rare Light Common

Photos? YES NO Photo Number \_\_\_\_\_  
Reviewed Data Sheet? YES NO

Comments: Handling was focused on a tracing of existing injuries, so measurements were skipped other than a weight





# Climate change in mountains: a review of elevation-dependent warming and its possible causes

Imtiaz Rangwala · James R. Miller

Received: 25 April 2011 / Accepted: 27 January 2012 / Published online: 16 March 2012

© Springer Science+Business Media B.V. 2012

**Abstract** Available observations suggest that some mountain regions are experiencing seasonal warming rates that are greater than the global land average. There is also evidence from observational and modeling studies for an elevation-dependent climate response within some mountain regions. Our understanding of climate change in mountains, however, remains challenging owing to inadequacies in observations and models. In fact, it is still uncertain whether mountainous regions generally are warming at a different rate than the rest of the global land surface, or whether elevation-based sensitivities in warming rates are prevalent within mountains. We review studies of four high mountain regions – the Swiss Alps, the Colorado Rocky Mountains, the Tibetan Plateau/Himalayas, and the Tropical Andes – to examine questions related to the sensitivity of climate change to surface elevation. We explore processes that could lead to enhanced warming within mountain regions and possible mechanisms that can produce altitudinal gradients in warming rates on different time scales. A conclusive understanding of these responses will continue to elude us in the absence of a more comprehensive network of climate monitoring in mountains.

## 1 Introduction

During the last century, global surface air temperature has increased by  $0.75^{\circ}\text{C}$  according to the Fourth Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC; Trenberth et al. 2007). Between 1975 and 2010, land temperatures have been increasing at a rate of  $0.30^{\circ}\text{C}/\text{decade}$ , which is more than double the rate ( $0.12^{\circ}\text{C}/\text{decade}$ ) of ocean warming. It has been proposed that mountainous regions may be more sensitive to

---

I. Rangwala  
Physical Sciences Division, NOAA Earth System Research Laboratory, Boulder, CO, USA

J. R. Miller  
Department of Marine and Coastal Sciences, Rutgers University,  
71 Dudley Road, New Brunswick, NJ, USA

*Present Address:*

I. Rangwala (✉)  
Department of Marine and Coastal Sciences, Rutgers University,  
71 Dudley Road, New Brunswick, NJ, USA  
e-mail: rangwala@marine.rutgers.edu

global scale climate change than other land surface at the same latitude (e.g., Messerli and Ives 1997; Beniston et al. 1997). Several studies have suggested that mountain regions have warmed at a greater rate than their low elevation counterparts often with greater increases in daily minimum temperatures than daily maximum temperatures (e.g. Diaz and Bradley 1997; Beniston et al. 1997; Rangwala et al. 2009; Liu et al. 2009; Qin et al. 2009; Pederson et al. 2010). Most climate models find enhanced warming in mountains and do so more consistently than found in observations (Pepin and Lundquist 2008).

Much of the world's supply of surface water has its source in mountains, which makes it critical to understand how climate will change in these regions. The Tibetan Plateau, with more than 36,000 glaciers (Liu et al. 2010) that drain into the main rivers of Asia (e.g. Yangtze, Yellow, Mekong, Brahmaputra, Ganges, Indus), directly and indirectly supplies water to the most populous region of the world with more than two billion people. Some of the Tibetan glaciers are melting rapidly, with surface losses in some places of 0.77 km<sup>2</sup> per year between 1999 and 2003 (Kehrwald et al. 2008). Beniston (2003) states that worldwide 30 to 50% of existing mountain glacier mass could disappear by 2100.

A continuous warming trend at high altitudes during this century could significantly modify the hydrologic cycles in these mountains (e.g., Nijssen et al. 2001). Increased warming will cause decreases in winter and spring snowpack leading to changes in the pattern of seasonal streamflow – generally a reduction in summer flows (Dettinger and Cayan 1995; Arnell 2003; Saunders et al. 2008). Small shifts in precipitation regimes in the mountains could cause widespread disruptions of freshwater availability (e.g., Beniston et al. 1997). Furthermore, increased evaporation from warming in elevated regions may cause severe drying in summer months (e.g., Beniston 2003). Increased warming and changes in precipitation are likely to have significant consequences for humans and ecosystems within the mountains as well as those downstream (Dettinger and Cayan 1995; Nijssen et al. 2001; Arnell 2003; Beniston 2003). These impacts include reduction in reservoir storage, increases in the intensity of wildfires, drought and pest induced plant mortality, and temperature induced changes in aquatic life (e.g., Overpeck and Udall 2010).

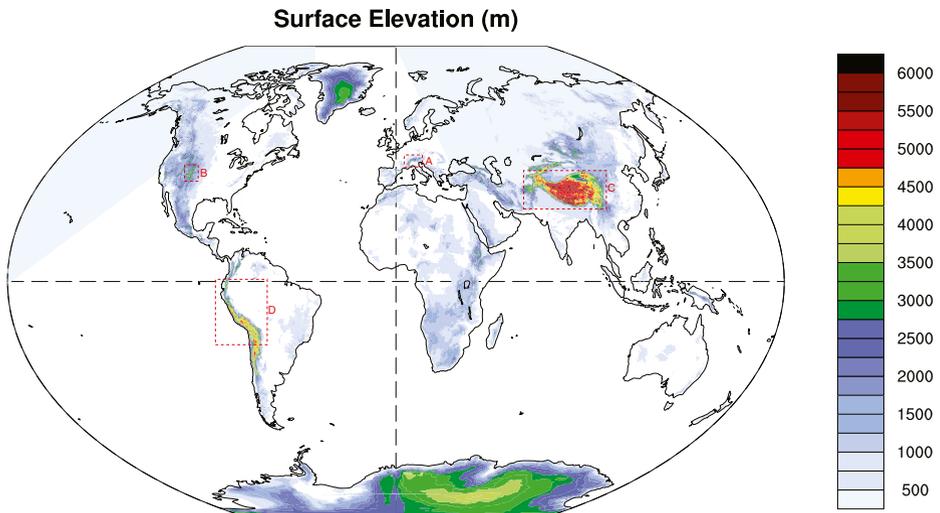
Within several mountain regions, studies have found an elevation dependency in surface warming where in several cases greater warming rates were reported at higher altitudes (e.g. Beniston and Rebetez 1996; Diaz and Bradley 1997; Liu and Chen 2000; Diaz and Eischeid 2007; Liu et al. 2009; Rangwala et al. 2009), however, there are other studies which found greater warming rates at lower elevations (e.g. Vuille and Bradley 2000; Pepin and Losleben 2002; Lu et al. 2010). Beniston et al. (1997) suggests that a tendency for greater warming rates at higher altitudes may be more apparent in the tropics. Furthermore, there are also studies where no elevation dependency in warming rates was found (e.g., Vuille et al. 2003; Pepin and Lundquist 2008; You et al. 2010). In fact, there are even studies within the same mountain region which obtain different results regarding elevation-dependent warming rates. For example, Liu and Chen (2000), Liu et al. (2009), Qin et al. (2009) and Rangwala et al. (2009) found increased warming rates at higher altitudes in the Tibetan Plateau in the latter half of the 20th century, while You et al. (2010) found no elevation-based trends and the study by Lu et al. (2010) suggests greater warming trends at lower elevations. Because some studies have found increases in warming rates with elevation in mountain regions and others have found decreases, references to elevation-dependent responses in this review refer to either case.

There are two fundamental questions regarding climate change in high elevation regions. One is whether the rate of warming within mountain regions is changing at a different rate than rest of the global land surface, and the second is whether the rates of change differ depending on elevation within a specific mountain region. In this

paper, we review studies that have examined these questions using both observations and climate model output from selected high mountain regions. Table 1 lists these studies including the information on time period, elevation range and number of stations considered in these studies. We summarize the results from these studies and then examine the role of relevant feedbacks and mechanisms that can produce elevation-sensitive responses. The next section explores our current understanding of whether mountain regions are warming faster than other land areas. Section 3 examines the question of elevation-dependent warming within a mountain region, and summarizes findings of observed and modeled climate change in mountains with a focus on four mountain regions: The Swiss Alps, The Colorado Rocky Mountains, The Tibetan Plateau/Himalayas and The Tropical Andes (see Fig. 1). In section 4, we discuss potential mechanisms that might enhance temperature change in mountains. We discuss some key insights that emerge from these studies in the final section.

**Table 1** List of studies that were reviewed to assess elevation sensitive warming within mountain regions. Also included are the information on time period, elevation range and number of stations considered in these studies

| Study                     | Region                    | Time Period  | Elevation Range (m) | No. of Stations           |
|---------------------------|---------------------------|--------------|---------------------|---------------------------|
| Diaz and Bradley 1997     | Global                    | 20th Century | 1055–3310           | 126                       |
| Pepin and Lundquist 2008  | Global                    | 1948–2002    | 500–4700            | 1084                      |
| Pepin and Seidel 2005     | Global                    | 1948–2002    | 500–4700            | 1084                      |
| Seidel and Free 2003      | Global                    | 1960s–2000   | 2–3649              | 52; incl. radiosonde data |
| Beniston and Rebetez 1996 | Swiss Alps                | 1979–1993    | 271–3572            | 88                        |
| Beniston et al. 1994      | Swiss Alps                | 1901–1992    | 276–2500            | 4                         |
| Ceppi et al. 2010         | Swiss Alps                | 1959–2008    | 200–3500            | 2 km gridded data         |
| Jungo and Beniston 2001   | Swiss Alps                | 1901–1999    | 271–3572            | 19                        |
| Clow 2010                 | Colorado Rockies          | 1986–2007    | 2560–3536           | 70                        |
| Diaz and Eischeid 2007    | Colorado Rockies          | 1987–2006    | 1250–4000           | 4 km gridded data         |
| Rangwala and Miller 2010  | Southern Colorado Rockies | 1895–2005    | 1763–3536           | 58                        |
| Pepin and Losleben 2002   | Colorado Front Range      | 1952–1998    | 1059–3749           | 3                         |
| Chen et al. 2006b         | Tibetan Plateau           | 1961–2000    | 1591–4670           | 63                        |
| Liu and Chen 2000         | Tibetan Plateau           | 1955–1996    | 200–4801            | 197                       |
| Liu et al. 2006           | Tibetan Plateau           | 1961–2003    | 2000–4500           | 66                        |
| Liu et al. 2009           | Tibetan Plateau           | 1961–2006    | 0–5000              | 116                       |
| Lu et al. 2010            | Tibetan Plateau           | 1960–2005    | 1000–5000           | 140                       |
| Qin et al. 2009           | Tibetan Plateau           | 2000–2006    | 2000–5000           | 71; incl. satellite data  |
| Rangwala et al. 2009      | Tibetan Plateau           | 1961–2000    | 1000–5000           | 43                        |
| You et al. 2008           | Tibetan Plateau           | 1961–2005    | 2100–4700           | 71                        |
| You et al. 2010           | Tibetan Plateau           | 1951–2004    | 2100–4700           | 71                        |
| Bhutiyani et al. 2007     | Indian Himalayas          | 1901–1989    | 1200–3800           | 10                        |
| Kothawale et al. 2010     | Indian Himalayas          | 1901–2007    | not available       | 12                        |
| Shrestha et al. 1999      | Nepal Himalayas           | 1971–1994    | 72–3705             | 49                        |
| Vuille and Bradley 2000   | Tropical Andes            | 1939–1998    | 0–5000              | 268                       |
| Vuille et al. 2003        | Tropical Andes            | 1950–1994    | 0–5000              | 277                       |



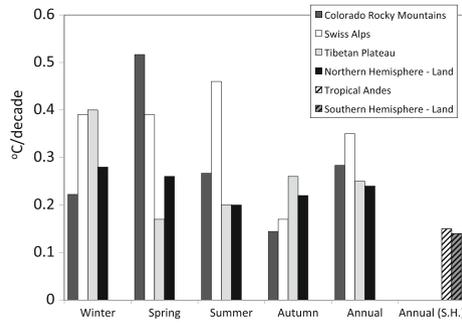
**Fig. 1** Global land surface elevation (m). The dashed boxes and letters indicate the four mountain regions considered in this review: (A) the Swiss Alps, (B) the Colorado Rockies, (C) the Tibetan Plateau and the Himalayas, and (D) the Tropical Andes

## 2 Are mountains warming faster than other land areas globally?

This question has not been adequately addressed in the existing literature primarily because of the current state of climate monitoring and the relative sparsity of observations in mountainous regions. Several studies have suggested that mountain regions may be warming at higher rates globally (e.g., Messerli and Ives 1997; Beniston et al. 1997; Diaz and Bradley 1997). However, it also is suggested that long-term trends in mean annual temperatures in mountains are comparable to lowlands, although there are significant differences on seasonal and diurnal scales (e.g., Barry 2001). Figure 2 compares seasonal and annual temperature trends in the late 20th century between the hemispheric land and selected mountain regions covered in this study. For the Southern Hemisphere, we only examine the annual trends because of the lack of significant seasonality in the Tropical Andes. For the Northern Hemisphere, there are substantial differences in warming rates on a seasonal basis such that some mountain regions showing much greater warming trends in some seasons. In the Swiss Alps, warming rates are large in all seasons except autumn. For the Colorado Rockies and Tibetan Plateau, warming trends are largest in summer and winter, respectively. However, annual warming rates in the mountains are comparable to the associated hemispheric land averages.

Most studies have analyzed temperature trends in a specific mountain region and compared them to global or hemispheric trends (e.g., Beniston et al. 1997; Liu and Chen 2000; Ceppi et al. 2010). They often find that a mountain region is warming faster than the global or hemispheric average. However, these analyses cannot be used to answer the primary question posed in the title of this section because (a) the spatial scales being compared are vastly different with a much greater spatial variability expected across the global and hemispheric scales and, (b) the observation stations in mountain regions do not adequately sample the region, both geographically and topographically.

Seidel and Free (2003) performed a station-based comparison of temperature trends (1960s–2000) at a high and a representative low elevation site for 26 station pairs across



**Fig. 2** Comparison of daily average temperature trends between the Northern Hemisphere (Land) and three high elevation regions (Colorado Rockies, Swiss Alps and Tibetan Plateau), and between the Southern Hemisphere (Land) and the Tropical Andes during the latter half of the 20th century. For the Southern Hemisphere, only the annual trends are compared because of the lack of significant seasonality in the Tropical Andes. Time period used to estimate trend magnitudes is slightly different based on the source study for each region. North-central Colorado Rocky Mountains: 1957–2006 (Ray et al. 2008); Swiss Alps: 1959–2008 (Ceppi et al. 2010); Central & eastern Tibetan Plateau: 1961–2004 (You et al. 2010); Tropical Andes: 1959–2006 (Vuille et al., 2008); Northern and Southern Hemisphere – Land: 1959–2008 ([www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)). Seasons are defined as winter (DJF), spring (MAM), summer (JJA) and autumn (SON)

the globe. They found that in the tropics the mountain stations had higher warming rates relative to their low elevation counterparts, however the results were mixed for the extra-tropics. They state that the high elevation stations selected in their studies do not sufficiently represent the associated mountain region because they are often at relatively low elevation, rarely on mountain peaks and usually in topographic hollows.

One way to address this question using available observations might be to perform a regional-pair-based comparison, akin to the station-pair-based comparison by Seidel and Free (2003). For such a comparison at the global scale, a lower elevation reference region or regions must be appropriately identified relative to a specific mountain region such that the variability associated with geographical scales, latitudinality and continentality are comparable. In addition to examining this question for mean temperature trends, it may be preferable to assess trends in minimum and maximum daily temperatures separately because they can change at different rates and for different reasons.

### 3 Is there elevation-dependent warming within mountain regions?

#### 3.1 Global

There are very few analyses that examine elevation-dependent warming trends in mountains at the global scale. Most studies focus on a particular region. In this section we summarize some of these global studies. Diaz and Bradley (1997) used observations from more than 100 sites between 30 and 70°N latitude and found that mean temperature warming rates were enhanced at many higher elevation sites between 1951 and 1989. Furthermore, they found that most of the increase was associated with increases in minimum temperatures, and that the trends in maximum temperatures were small. Beniston et al. (1997) indicate that enhanced warming rates at higher elevations may be more apparent in the tropics. Pepin and Seidel (2005) found that surface temperatures at the majority of high elevation stations across the

globe are increasing faster than the free air temperature at the same elevation between 1948 and 2002. They also found less discrepancy between surface and free-air temperatures at mountain summits relative to mountain valleys. Overall, however, they found no elevation dependence of warming rates.

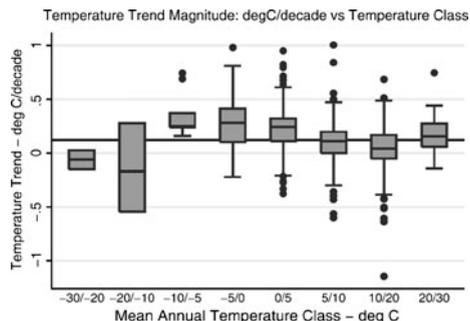
One of the more comprehensive global studies is that of Pepin and Lundquist (2008) who analyzed more than 1000 high elevation stations. They found no elevation dependency in temperature trends and concluded that this was, in part, because mountain summits and freely draining slopes show less variance in temperature trends than do incised valleys where local effects are more important. However, most of the stations analyzed in their study are below 2000 m. Their analysis suggested that the warming rates are strongest near the annual 0°C isotherm (Fig. 3), which implies a role of the snow/ice albedo feedback mechanism causing enhanced warming at these elevations.

Several modeling studies have addressed elevation-dependent warming. Diaz and Bradley (1997) suggest that models tend to simulate elevation-dependent warming in the mountains. Bradley et al. (2004) analyzed seven global climate model simulations and found large increases in free air temperature along the whole extent of the American Cordillera (Alaska to southern Chile) when atmospheric CO<sub>2</sub> levels were doubled. These free air temperature changes increased with elevation. They argued that such increases in the free air temperature could augment the warming rates at higher surface elevations. In one of the more comprehensive global studies, Nogues-Bravo et al. (2007) used five climate models at 0.5° resolution and four IPCC scenarios to examine projected climate change in mountains later this century. They found future rates of warming to be two to three times higher than recorded in the 20th century and larger temperature increases in higher northern latitude mountains than in temperate and tropical zones. However, they did not specifically address elevation-dependent warming. Some modeling studies have suggested that the increasing influence of snow/ice albedo feedback mechanisms, primarily during spring and summer, could be responsible for increased warming rates at high elevations (e.g., Giorgi et al. 1997). Although there are plausible reasons why elevation-dependent climate responses might arise, mountain systems are inherently difficult to understand owing to their complex topography that is still difficult to represent accurately in models.

### 3.2 The Swiss Alps

Historically, the Swiss Alps may be the best observed among high mountain regions (e.g., Beniston et al. 1997). However, even here the climate at higher elevations (above 3000 m) is

**Fig. 3** Mean annual temperature trend magnitudes, between 1948–2002, for different mean annual temperature bands from 1084 mountain stations described in Pepin and Lundquist 2008 (Fig. 2c in Pepin and Lundquist 2008). Trend magnitudes are generally higher for regions associated with -5 – 0°C and 0 – 5°C temperature bands



not adequately observed. The 20th century warming in the Alps has been greater than the global and hemispheric (land and ocean combined) average (Beniston et al. 1994; Beniston et al. 1997; Ceppi et al. 2010). There is, however, a diurnal asymmetry in the warming because minimum temperatures have risen at a higher rate than maximum temperatures. In fact, the daytime maximum temperatures in the Swiss Alps experienced a cooling trend in the 1980s (Beniston et al. 1994).

Beniston and Rebetez (1996) reported altitudinal gradients in nighttime warming anomalies during winter. Using observations from 88 stations in the Swiss Alps, they found greater increases in the wintertime minimum temperatures at higher elevations during the late 1980s and early 1990s, a period that experienced warm, wet winters in connection with positive North Atlantic Oscillation (NAO) indices. However for an anomalously cold period between 1983 and 1987, when some of the years had negative NAO indices, they found a switch in the sign of the altitudinal gradient in the wintertime minimum temperature anomalies. They concluded that temperature variability generally increased with altitude owing to a damping out of temperature anomalies at lower elevations by local climatic effects. For the 1961–1999 period, Jungo and Beniston (2001) found greater increases in the minimum temperature in winter at high altitudes in the Swiss Alps, however, they found greater increases in the maximum temperature in summer at low altitudes on the north side of the Alps.

Giorgi et al. (1997) used a regional climate model (50 km spatial resolution) forced by doubled atmospheric CO<sub>2</sub> levels to simulate seasonal climatic changes in the Swiss Alps. Their analysis suggested larger increases in average surface air temperature at higher elevations during all seasons, although the elevation dependence was most pronounced in winter and spring. The surface elevation range in their model, however, was only between 100 and 2000 m. Both spring and winter experienced large decreases in snow depth at higher elevations. However, they found a large altitudinal gradient in surface absorption of solar radiation only for spring; a very weak gradient was simulated during winter. Their analysis suggests a strong snow albedo feedback mechanism to explain the greater springtime warming at higher elevations but no clear explanation for the wintertime warming simulated in their study.

Ceppi et al. (2010) used a 2 km×2 km gridded mean temperature data set, interpolated from 91 homogenized stations from the Swiss Alps, to examine trends between 1959 and 2008. Their analysis found high warming rates during summer (0.46°C/decade) and winter (0.40°C/decade). Using a statistical model, they also concluded that circulation changes did not significantly affect these trends except during winter when they could explain 50% of the variance. Seasonally, their analysis did not reveal altitudinal gradients in warming rates, although they did find larger temperature anomalies below 500 m in all seasons except spring. In spring, they also found larger trends at mid to high elevations in association with the 0°C isotherm.

### 3.3 The Colorado Rocky Mountains

Analysis of long-term trends in annual mean temperatures from the Colorado Rocky Mountains indicates large warming trends (0.5–1°C/decade) during the last three decades, but particularly since the mid-1990s (Diaz and Eischeid 2007; Ray et al. 2008; Saunders et al. 2008; Clow 2010; Rangwala and Miller 2010). The recent warming trend in the Colorado Rocky Mountain region appears to be among the largest in the contiguous United States (e.g., Saunders et al. 2008). This warming is found in all seasons although the largest increases in temperatures are observed mostly in winter and summer (Clow 2010).

Williams et al. (1996) and Pepin and Losleben (2002) reported decreases in mean annual temperatures at high elevation stations (Niwot Ridge) between 1952 and the mid-1980s, and increases since then. This cooling trend has been attributed to short-term climate oscillations. Rangwala and Miller (2010) found decreases in the maximum temperature during the same time period in the San Juan Mountains in southwestern Colorado; however, they also found a slight increasing trend in the minimum temperature during that period. They attributed the decreases in the maximum temperature, in part, to increases in the anthropogenic aerosol loading in the region. Between 1994 and 2005, they found similarly high annual warming rates ( $\sim 1^\circ\text{C}/\text{decade}$ ) in the minimum and maximum temperatures. However, between 2006 and 2009, Rangwala and Miller (2011) found decreasing trends in the maximum temperature while no such trends were found in the minimum temperature. They suggest that the maximum temperature could be affected more by the interannual variability in precipitation, particularly in the cold season, as compared to the minimum temperature.

Long-term observations in the Rockies are available from NOAA's National Weather Service (NWS) cooperative stations. Since the 1980s, temperature observations are also available from the Natural Resources Conservation Service's (NRCS) Snow Telemetry (SNOTEL) stations that are located between 3000–3500 m elevations and are about 800 m higher relative to the NWS stations. Clow (2010) points out that the observed temperature increases at the SNOTEL sites in the Colorado Rocky Mountains between 1979 and 2006 ( $\sim 1^\circ\text{C}/\text{decade}$ ) are substantially greater than those for the entire state of Colorado ( $0.4^\circ\text{C}/\text{decade}$ ) which are based on Ray et al. (2008) who only considered the NWS stations. Although Rangwala and Miller (2010) did not find any significant difference in annual warming rates between the SNOTEL and NWS stations within the San Juan Mountains, they did find greater warming rates at NWS sites in winter and at SNOTEL sites in summer.

Diaz and Eischeid (2007) used PRISM (Parameter-elevation Regressions on Independent Slopes Model) data to evaluate warming rates at different elevations (1000–4000 m) in the Colorado Rocky Mountains between 1979 and 2006. PRISM is a 4 km grid-based mapping of observations that includes NWS and SNOTEL sites (Daly et al. 2008). They found enhanced warming rates in both the minimum and maximum temperatures at elevations above 2000 m and also found an elevation-dependent gradient in the warming rates of both variables between 2000 and 4000 m with higher warming rates at higher elevations. However, caution must be exercised in interpreting these results because observations above 3000 m are limited, and since there are almost none above 3500 m, it is difficult to assess how well the PRISM data represent temperatures at these higher elevations. Gutmann et al. (2011) used a high resolution (2 km) model driven by historical boundary conditions to obtain a precipitation climatology for the Colorado Rocky Mountains and found significant differences, relative to PRISM, at higher elevations and away from an observation site.

### 3.4 The Tibetan Plateau and the Himalayas

The last decade has seen a rapidly growing interest in understanding climate change on the Tibetan Plateau and in the Himalayas, in part, because climatic changes there are likely to have significant impacts on water resources for a large percentage of the population in eastern and southeastern Asia. The Tibetan Plateau is occasionally referred to as the third pole because of the large expanse of snow and ice found there. Weather observations are available primarily for the central and eastern parts of the Plateau, and much less information

is available for a large portion of the western half, which is relatively higher in elevation and may be more important in a hydrologic sense. The average elevation for the region is more than 4000 m.

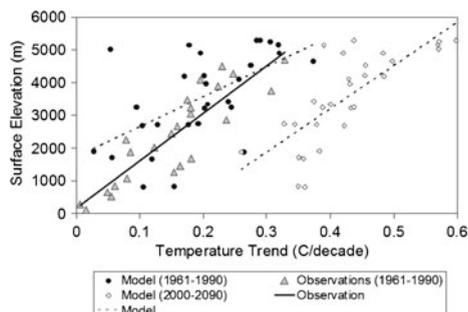
The Tibetan Plateau may be among the most sensitive regions to the ongoing global climate change. Evidence suggests that the warming during the latter half of the 20th century started earlier (early 1950s) than the Northern Hemisphere trend (mid-1970s), and Niu et al. (2004) found that the region experienced a rapid temperature increase in the mid-1980s. For the 40-year period from 1955 to 1996, Liu and Chen (2000) found that the Tibetan Plateau experienced large warming rates in winter ( $0.32^{\circ}\text{C}/\text{decade}$ ) and autumn ( $0.17^{\circ}\text{C}/\text{decade}$ ). Even larger warming rates were reported for the central and eastern Plateau when more recent years were included (Duan and Wu 2006; Liu et al. 2006; Wang et al. 2008; Rangwala et al. 2009). The increases are thought to be associated with enhanced warming in spring and summer in the latter part of the 1990s.

There is significant seasonal variability in warming rates on the Plateau. Liu and Chen (2000) found that the warming rate in winter was about twice as large as the annual mean warming rate, a result which is consistent with other studies (Chen et al. 2006b; Liu et al. 2006; You et al. 2007; Rangwala et al. 2009). Autumn has the next highest warming rate, while summer and spring have only recently (since the 1990s) experienced significant increases in warming (Liu et al. 2006; Rangwala et al. 2009). Liu et al. (2006) also examined trends in minimum and maximum temperatures for the 42-year period from 1961 to 2003. They found that minimum temperatures were increasing faster than maximum temperatures in all months, but more so in winter and spring. The absolute increases in the minimum temperature were also highest in winter and spring. Temperature changes in the Tibetan Plateau are similar to those in the northern high latitudes where the warming rate during the last 50 years has also been greater in winter and spring, and smaller in summer (Serreze et al. 2000).

Although there is evidence of elevation-dependent warming within the Tibetan Plateau, the sparsity of data at the higher elevations limits our ability to interpret these results conclusively. Using an extensive selection of weather stations within the Tibetan Plateau, Liu and Chen (2000) found a differential increase in the rate of surface warming dependent primarily on the elevation of the observing station for the 1960–1990 period. Rangwala et al. (2010) found comparable trends of increases in warming rates with elevation on the Plateau from a climate model for the same historical period and during the 21st century (Fig. 4).

A recent study by You et al. (2010) did not find any significant elevation dependence in warming rates of mean temperature between 1961 and 2005. However, for the same period and considering mostly the same stations, Liu et al. (2009) found that the warming rates for

**Fig. 4** Observed (1961–1990; from Liu and Chen 2000) and modeled (1961–1990 and 2000–2090) trends in surface temperature ( $^{\circ}\text{C}/\text{decade}$ ) in the Tibetan Plateau as related to the elevation of the observing station and the model grid, respectively (Fig. 2b in Rangwala et al. 2010). Model results are based on 29 grid cells using updated  $3^{\circ}\times 4^{\circ}$  version of Russell et al. (1995) model



daily minimum temperature were greater at higher elevations and more pronounced in winter and spring. You et al. (2008) examined correlation of different indices of temperature extremes with elevation but did not find any significant correlation. Possible reasons for the differences between these results could be that they were examining different variables and were using different stations.

One way to augment the sparsity of observations in high elevation regions is to use reanalyses. You et al. (2010) compared temperature trends in the Tibetan Plateau obtained using two different reanalyses with 71 homogenized surface stations. They found that one reanalysis (ERA-40) showed a general warming trend consistent with the surface-based trend, especially in winter. However, the trend did not appear in the other reanalysis (NCEP). They did not find any elevation dependency in temperature trends and concluded that different reanalyses can lead to different trends because of such factors as topographic differences between data sets and other reanalysis model differences.

Another way to increase the number of observations is to incorporate satellite data into the analysis. Qin et al. (2009) used MODIS monthly-averaged land surface temperatures to examine elevation-dependent warming in a wider portion of the Tibetan Plateau. They were able to supplement the surface observations in the western Tibetan Plateau and obtain temperature trends for regions above 5000 m. They first showed that the temperature trends from MODIS were consistent with surface-based trends where surface measurements were available. They then extended their results to the broader Tibetan Plateau and did find elevation-dependent warming with the warming rate increasing with altitude between 3000 m and 5000 m. However, they also found that above 5000 m, there was no additional enhancement of the warming rate. They suggest that a reason for the mixed results regarding elevation-dependent warming found in previous studies (i.e., some studies found it and others didn't) may have occurred because the surface-based stations were not sufficiently representative of the spatial heterogeneity of the region.

The Yunnan Plateau in southwestern China is a high elevation region located southeast of the Tibetan Plateau. The mean elevation of the Yunnan Plateau is above 2000 m with mountain peaks as high as 3700 m. Fan et al. (2010) analyzed records from 119 meteorological stations over the Yunnan Plateau and found that regional temperature there has been increasing at a rate of  $0.3^{\circ}\text{C}/\text{decade}$  for the last four decades. They also found that the warming trends are enhanced during winter, minimum temperatures are increasing faster than maximum temperatures, and increases are greater in the higher elevation regions. These results are consistent with most of the studies for the nearby Tibetan Plateau.

Observations from the Indian and Nepal Himalayas yield a different climate change narrative than found on the Plateau. Shrestha et al. (1999) and Bhutiyani et al. (2007) found that the maximum temperatures have been increasing at a greater rate than minimum temperatures in recent decades. These studies suggest that monsoonal circulation has a role in producing these trends. Shrestha et al. (1999) also found elevation dependence in the rate at which maximum temperatures were increasing in the Nepal Himalayas, with higher rates at higher elevations. They report that the warming was greater during the monsoon (Jun–Sep) and post-monsoon (Oct–Nov) months.

Kothawale et al. (2010) find that, between 1971 and 2007, the western Himalayan region of India has warmed at a higher rate ( $0.46^{\circ}\text{C}/\text{decade}$ ) than rest of India ( $0.20^{\circ}\text{C}/\text{decade}$ ). Similar to other studies from the Indian and Nepal Himalayas, they find that maximum temperatures are increasing at a faster rate ( $0.53^{\circ}\text{C}/\text{decade}$ ) than minimum temperatures ( $0.37^{\circ}\text{C}/\text{decade}$ ). Seasonally, winter is experiencing the highest warming rates with increases in maximum temperatures ( $0.82^{\circ}\text{C}/\text{decade}$ ) almost twice as large as increases in minimum temperatures ( $0.47^{\circ}\text{C}/\text{decade}$ ). Possible reductions in cloud cover, snow cover or

precipitation during winter could cause such large increases in the maximum temperatures. However, there is some evidence that winter precipitation has a small upward (Archer and Fowler 2004) or insignificant (Bhutiyan et al. 2010) trend in this region during the latter half of the 20th century. Although, Bhutiyan et al. (2010) suggest that in recent decades a large proportion of winter precipitation has been falling as rain instead of snow on the windward side of the northwestern Himalayas. This implies a possible reduction in snow cover in winter that could cause increases in maximum temperature through the snow-ice albedo feedback mechanism.

### 3.5 The tropical Andes

The Andes Mountains in South America differ from the Alps, Rocky Mountains, and Himalayas in a number of ways, but one in particular is that they are aligned along the west coast of the continent. The southern Andes are in the westerly wind belt and directly affected by their proximity to the ocean, but the tropical Andes derive much of their moisture from the east. Since we found very few studies of the central and southern Andes, the focus here is on the tropical Andes, where many of the studies have been concerned with the melting of tropical glaciers. Ames (1998) reports that between 1932 and 1994, the ten monitored tropical glaciers of Peru have been retreating. Vuille and Bradley (2000) used temperature data from 268 stations ranging from 0 to 5000 m above sea level, to investigate the inconsistency between the observed glacier retreat and slight cooling trend in the lower tropical troposphere after 1979 as reported by Gaffen et al. (2000). They found that annual mean temperatures in the tropical Andes were increasing at a rate of  $0.33^{\circ}\text{C}/\text{decade}$  between 1975 and 2000, and that the warming rate, although positive, was reduced at higher elevations. However, they also found that warming rates did increase with altitude between 1000 m and 2500 m on the eastern slopes of the mountains. The warming rate is smaller when the record is extended further into the past; it is  $0.11^{\circ}\text{C}/\text{decade}$  for 1939–1998 (Vuille and Bradley 2000) and  $0.15^{\circ}\text{C}/\text{decade}$  for 1950–1994 (Vuille et al. 2003). Vuille et al. (2008) extended this record to include observations from 279 stations between 1939 and 2006, and reported a warming trend of  $0.1^{\circ}\text{C}/\text{decade}$ , which is similar to the trend found in NCEP-derived upper (500mb) air temperature increases in the last 50–60 years (Bradley et al. 2009).

At the larger scale, sea surface temperatures affect the circulation in the region. Vuille and Bradley (2000) indicated that during their 60-year record (1939–1998), all of the major warm anomalies in the tropical Andes coincided with El Niño events and all of the major cold anomalies coincided with La Niña events. Diaz and Graham (1996) found that the freezing level height (FLH) has been rising between 1958 and 1990 and noted that this rise was related to sea surface temperatures in the eastern tropical Pacific. A more recent study by Bradley et al. (2009) using upper air temperatures from the NCEP/NCAR reanalysis data set also found that FLH has been rising and that the interannual variability of FLH is controlled by the phase of ENSO variability.

There have also been modeling studies of the tropical Andes. Vuille et al. (2003) used an atmospheric GCM to better understand the reason for the rapid glacier retreat between 1950 and 1998. Their analysis indicated that temperature increases were more responsible for the retreat than changes in the hydrologic cycle. Their model simulation generally reproduced the spatial pattern of the observed warming which is larger on the western slopes. They attributed the increasing temperatures to warmer sea surface temperatures in the equatorial Pacific and changes in clouds and atmospheric water vapor. Urrutia and Vuille (2009) used a regional model and projected that there would be significant future warming in the tropical Andes and that the warming would be enhanced at higher elevations.

## 4 Mechanisms responsible for possible temperature enhancements

There are a number of mechanisms that can produce enhanced warming rates in certain elevation bands, and they often have a strong seasonal dependence. These mechanisms arise from either elevation based differential changes in climate drivers, such as snow/ice cover, clouds, water vapor, aerosols, and soil moisture, or differential sensitivities of surface warming to changes in these drivers at different elevations. Table 2 describes the specific responses and the physical mechanisms based on changes in these climate drivers, and we discuss some of these mechanisms in more detail.

### 4.1 Snow/ice albedo feedbacks

This is certainly one of the strongest feedbacks in the climate system, and it has a rapid response time. In response to a positive temperature anomaly, more snow melts thus decreasing the local albedo, which in turn leads to increased absorption of solar radiation and enhancement of the initial positive temperature anomaly. Since this feedback modulates the surface absorption of incoming solar radiation, it primarily affects changes in the maximum temperature. Increases in the minimum temperature are also possible if decreases in snow cover are accompanied by increases in soil moisture and surface humidity which can facilitate a greater diurnal retention of the daytime solar energy in the land surface and amplifies the longwave heating of the land surface at night (Rangwala et al. 2012).

This feedback should be strongest at elevations associated with the snow line or the 0°C isotherm, and it should be more important at lower elevations earlier in the cold season and more important at higher elevations later in the year. For the Tibetan Plateau, Rikiishi and Nakasato (2006) found that the length of the snow cover season has been declining at all elevations between 1966 and 2001, with the highest rate of decline in the 4000–6000 m range. However, they found that the largest decrease in the mean snow-covered area occurred at the lowest elevation (0–500 m). Modeling studies have suggested that the increasing influence of snow/ice albedo feedback mechanisms, primarily during spring and summer, are important in causing elevational gradients in warming rates (e.g., Giorgi et al. 1997; Chen et al. 2003; Liu et al. 2009; Rangwala et al. 2010). Global analysis of observed temperature trends in mountain regions by Pepin and Lundquist (2008) suggest that the warming rates are strongest near the annual 0°C isotherm (Fig. 3), which could imply a role of the snow/ice albedo feedback mechanism causing enhanced warming at these elevations.

### 4.2 Cloud cover

Clouds are still arguably the most uncertain component of global climate model simulations of greenhouse gas scenarios because of their impact on both shortwave and longwave radiation. Changes in cloud cover and cloud optical depth strongly modulate both insolation and longwave radiation at the surface. Daytime decreases in cloud cover and optical depth will enhance the maximum temperature; however such a trend at night may lower the minimum temperature. Conversely, nighttime increases in cloud cover will cause increases in the minimum temperature. Although it's likely that changes in clouds are partly responsible for some of the temperature trends found in section 3, observational datasets of clouds are generally insufficient to resolve their local impact on climate. Assessing changes in clouds and quantifying cloud feedbacks will remain challenging in the near term.

For the Swiss Alps, Beniston and Rebetez (1996) found that stations located in valleys experienced lower increases in nighttime temperature anomalies during winter because of

**Table 2** Description of mechanisms that can produce an elevation sensitive temperature response at the land surface which will be dependent on elevation based changes in the climate drivers. Superscripts refer to the following citations: <sup>1</sup>Albrecht 1989; <sup>2</sup>Dai et al. 1999; <sup>3</sup>Durre et al. 2000; <sup>4</sup>Hansen et al. 1997; <sup>5</sup>Pepin and Lundquist 2008; <sup>6</sup>Rangwala et al. 2009; <sup>7</sup>Twomey 1974

| Climate Driver                                                  | Mechanisms                                                                                                                                                                            | Seasonal Relevance                                                                                                                                 | Temperature Response                                                                                                                                    |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Decreases in <b>Snow/Ice Albedo</b>                             | > Increases surface absorption of insolation                                                                                                                                          | Primarily spring; but also important in winter at lower elevations, summer at higher elevations, in association with the 0°C isotherm <sup>5</sup> | > Increases $T_{\max}$ ; suppressed effect if soil moisture also increases and causes daytime evaporative cooling                                       |
| Increases in <b>Cloud Cover</b> (Daytime)                       | > Decreases surface insolation                                                                                                                                                        | All seasons but greater effects in summer                                                                                                          | > Decreases $T_{\max}$ ; strongest effect when the cloud base is low <sup>2</sup>                                                                       |
| Increases in <b>Cloud Cover</b> (Nighttime)                     | > Increases downwelling longwave radiation                                                                                                                                            | All seasons but greater effects in winter                                                                                                          | > Increases $T_{\min}$                                                                                                                                  |
| Increases in <b>Specific Humidity (<math>q</math>)</b>          | > Increases downwelling longwave<br>> Downwelling longwave has high sensitivity to changes in $q$ when $q$ is less than 5 g/kg <sup>6</sup>                                           | Primarily winter; smaller effects are possible in autumn and spring                                                                                | > Increases $T_{\min}$                                                                                                                                  |
| Increases in <b>Aerosols: non-absorbing</b> e.g. sulfates       | > Decreases surface insolation<br>> Increases cloud albedo <sup>7</sup> and cloud lifetime <sup>1</sup>                                                                               | Dependent on seasonal emissions                                                                                                                    | > Decreases $T_{\max}$<br>> Small increases in $T_{\min}$ when cloud lifetime is enhanced<br>> Effect is somewhat localized to near the emission source |
| Increases in <b>Aerosols: absorbing</b> e.g. black carbon, dust | > Decreases surface insolation but increases mid-tropospheric heating<br>> Decreases albedo of clouds<br>> Decreases albedo of snow on ground<br>> Decreases cloud cover <sup>4</sup> | Dependent on seasonal emissions and insolation                                                                                                     | > Increases $T_{\min}$<br>> Increases $T_{\max}$ when cloud cover is reduced<br>> Effect is somewhat localized to near the emission source              |
| Increases in <b>Soil Moisture</b>                               | > Increases latent heat fluxes and decreases sensible heat fluxes during the day                                                                                                      | Snowmelt effects are strongest in spring and winter; rainfall effects are strongest in summer                                                      | > Decreases diurnal temperature range <sup>2</sup><br>> Strong $T_{\max}$ - soil moisture link in summer <sup>3</sup>                                   |

strong and persistent temperature inversions whereas stations located in regions (e.g. plateaus) exposed to stratus clouds, which trap outgoing infrared radiation, had much warmer nighttime temperature anomalies. Overall, they found that there was an altitudinal dependence of temperature anomalies that exhibited a linear trend except at lower elevations

where changes in fog and stratus clouds affected the results. This is consistent with Ceppi et al. (2010) who found pronounced increasing temperature trends in autumn at low altitudes (below 800 m) in the Swiss Alps, which they ascribed to decreases in the frequency of fog duration that lead to increases in the incoming solar radiation and the daytime heating of the land surface.

For the Tibetan Plateau, Duan and Wu (2006) found that low level nocturnal cloud cover was increasing over the central and eastern parts of the Plateau between 1961 and 2003. They suggest that these increases explain part of the increases in minimum temperatures over the Plateau in the latter half of the 20th century. During the same time period, they found that daytime and total cloud cover were decreasing which could increase the absorption of solar radiation and enhance daytime warming.

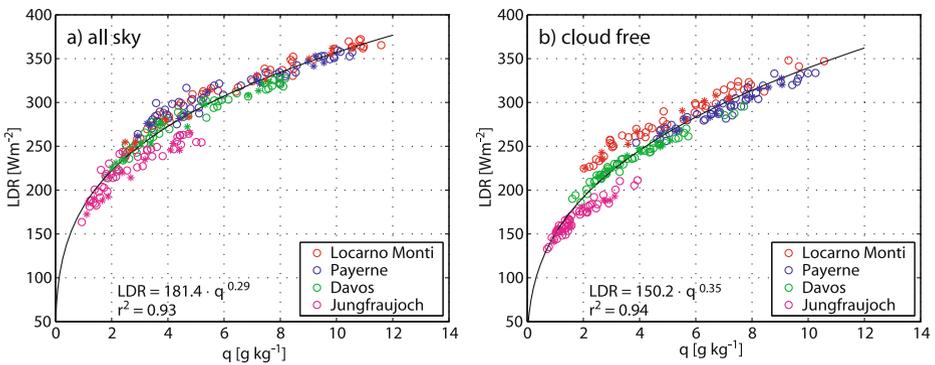
High-resolution climate models are likely to provide one of the best ways to investigate cloud feedbacks in high-elevation regions. Liu et al. (2009) examined 116 weather stations and high-resolution climate model output under a greenhouse-warming scenario and found that the increases in monthly minimum temperatures were greater at higher elevations in the Tibetan Plateau. They suggested that this elevation dependency was, in part, caused by cloud-radiation effects. Another modeling study by Vuille et al. (2003) found that changes in cloud cover were responsible for some of the temperature changes in the Tropical Andes.

#### 4.3 Water vapor modulation of longwave heating

The globally positive temperature perturbation produced by increasing levels of anthropogenic greenhouse gases (e.g., carbon dioxide) leads to more water vapor in the atmosphere that in turn absorbs and emits longwave radiation, thus enhancing the surface warming. Increases in surface specific humidity have been suggested to be partly responsible for a rapid increase in surface warming across central Europe (Philipona et al. 2005) and the Tibetan Plateau (Rangwala et al. 2009, 2010) in the late 20th century. These studies suggest that the increases in specific humidity cause significant increases in longwave downwelling radiation (LDR) producing a surface warming.

Although increases in LDR associated with increasing specific humidity occur globally, the sensitivity is non-linear and is particularly large when the initial humidity is low as found at high elevations during the cold season. Ruckstuhl et al. (2007) examined the seasonal relationship between observed surface specific humidity ( $q$ ) and LDR at four different surface elevations in the Swiss Alps. They found that LDR has large sensitivities to  $q$ , particularly when  $q$  is below 5 g/kg. Such low values of  $q$  occur during cold seasons and more widely at higher elevations (Fig. 5). Based on these findings, Rangwala et al. (2010) examined a global climate model simulation for the Tibetan Plateau and found a LDR- $q$  relationship similar to that of Ruckstuhl et al. (2007). They found that modeled LDR- $q$  relationships obtained for the Tibetan Plateau had greater sensitivities at higher elevations, particularly during the cold season. Ruckstuhl et al. (2007) found similar relationships between LDR and  $q$  for “clear sky” and “all sky” conditions, although the sensitivity of LDR to  $q$  was found to be slightly enhanced for “clear sky” conditions.

The mid-latitude boundary layer at high altitudes is expected to be under-saturated in longwave absorption in the water vapor absorption lines. Therefore, an increase in near surface water vapor during winter when the specific humidity is lowest will cause a large increase in LDR at the surface (Rangwala et al. 2009 and 2010). Such humidity modulation of increases in LDR will primarily cause increases in the minimum temperature. This process might be, in part, responsible for higher warming rates found during winter in the upland areas, globally, in both the observations (e.g., Liu and Chen 2000; Jungo and



**Fig. 5** Relationship between downwelling longwave radiation (LDR) and surface specific humidity (q), for (a) all sky and (b) cloud free conditions, obtained from observations from the Swiss Alps from four station observations at different surface elevation: Locarno-Monti (388 m), Payerne (498 m), Davos (1598 m) and Jungfrauoch (3584 m) (Fig. 5a,b in Ruckstuhl et al. 2007)

Beniston 2001; Holden and Rose 2011; Fan et al. 2010; Pederson et al. 2010) and climate models (e.g., Giorgi et al. 1997; Chen et al. 2003; Rangwala et al. 2010).

#### 4.4 Aerosols

##### 4.4.1 Absorbing aerosols: black carbon

Aerosols, black carbon (soot), and dust are additional contributors to warming. During the boreal spring, an atmospheric layer of dust from deserts and locally-emitted black carbon can be found up to 5 km high in the Indo-Gangetic Plain against the foothills of the Himalayas and Tibetan Plateau (Ramanathan and Carmichael 2008). Lau et al. (2010) used the NASA finite volume climate model to examine the potential impacts of this layer. They found that it absorbs solar radiation and warms the mid-troposphere, which in turn increases the rate of spring snowmelt and leads to enhanced warming of the atmosphere-land system. Their model results indicate that the increased heating occurs primarily because of changes in sensible and latent heat fluxes since the changes in shortwave and longwave radiation tend to offset each other. In a recent review paper by Ramanathan and Carmichael (2008), they suggest that black carbon in the Himalayan Mountains arising from anthropogenic activities might be responsible for half the total warming there during the last several decades. Because black carbon affects the radiation budget in two ways – it absorbs radiation in the troposphere and decreases the surface albedo when deposited on snow – it is very difficult to assess its effect on elevation-dependent warming. Depending on the elevation at which black carbon is deposited it could either contribute to enhanced or reduced warming with elevation during the melt season. Xu et al. (2009) suggest that atmospherically deposited black carbon can increase the absorption of visible radiation by 10–100% in the Tibetan Glaciers. Black carbon can also cause decreases in cloud cover and affect the radiation budget at the surface (Hansen et al. 1997).

##### 4.4.2 Absorbing aerosols: dust

Similar to black carbon, dust absorbs radiation within the atmosphere and reduces surface albedo when deposited on snow. Painter et al. (2007) analyzed several snow events in the Colorado Rocky Mountains and found that strong wind events in spring transport large

amounts of dust from arid regions to the west. This causes a significant reduction of surface albedo when snow melts during spring and increases the absorption of solar radiation and the rate of snowmelt. They suggest that this process could have a much greater impact on regional climate change than the longer-term snow-albedo feedback mechanism would without the dust deposition. For this particular region, the surface is particularly vulnerable to movement by wind because human activities and development perturb the soil, which would otherwise be more crusted and resistant to wind transport. Similarly to black carbon, the impact of dust on elevation-dependent warming will depend on the elevation at which it is deposited. During the melt season, we would expect enhanced warming at elevations where the dust is deposited.

#### 4.4.3 Non-absorbing aerosols

Reflective aerosols (e.g., sulfate aerosols) can affect local heat budgets by reducing the incoming solar radiation. These aerosols also interact with clouds and increased concentration of these aerosols can increase cloud reflectivity (Twomey 1974) and lifetime (Albrecht 1989). To the extent that the spatial variability of atmospheric aerosol concentrations can be attributed to elevation, aerosols could either enhance or reduce heating rates in mountains. There is still very little evidence in the literature about the role of reflective aerosols in mountain regions. Rangwala et al. (2010) found some evidence that aerosol concentrations have been higher at lower elevations in the Tibetan Plateau. This would cause the rate of increase of daytime maximum temperatures to be lower at these lower elevations and consequently contribute to an elevation gradient in warming rates.

## 5 Discussion

In this review, we have explored available literature to address two important questions related to climate change in the mountain regions: (1) are mountain regions warming faster than low lying regions, and (2) is there an elevation-dependent climate response within mountain regions? From the available studies, it remains difficult to sufficiently assess whether mountains have warmed at a higher rate than the rest of the global land surface primarily because we lack adequate observations to resolve it conclusively. However, available observations suggest that some mountain regions may be experiencing higher warming rates on seasonal time scales.

To explore the impacts of elevation on rates of temperature change within mountain regions, we have synthesized several important studies from four high mountain regions across the globe. It should be noted that the different regions considered in our study are vastly different in area, which allows for considerable geographical variability. Three of these regions are in mid-latitudes and one is in the tropics. However, the discussion of physical mechanisms reviewed here is applicable globally.

Table 3 summarizes some key findings associated with these studies of elevation-dependent warming in mountain regions. A majority of these studies suggest an elevation-dependent climate response in both observations and climate models. Some studies also suggest strong seasonality to the elevation-dependent response, particularly for the minimum temperature increases during the cold season and for the maximum temperature during the warm season. Although the collective evidence from these studies does not allow us to make global generalizations, a large number of observational and modeling studies suggest that elevation-dependent climate responses do occur under specific spatial and temporal conditions.

**Table 3** Compilation of the results from studies that investigated altitudinal gradient in warming rates. Superscripts refer to the following citations: <sup>1</sup>Bhutiyani et al. (2007), <sup>2</sup>Beniston and Rebetez (1996), <sup>3</sup>Ceppi et al. (2010), <sup>4</sup>Chen et al. (2003), <sup>5</sup>Diaz and Bradley (1997), <sup>6</sup>Diaz and Eischeid (2007), <sup>7</sup>Giorgi et al. (1997), <sup>8</sup>Liu and Chen (2000), <sup>9</sup>Liu et al. (2009), <sup>10</sup>Lu et al. (2010), <sup>11</sup>Pepin and Lundquist (2008), <sup>12</sup>Qin et al. (2009), <sup>13</sup>Rangwala et al. (2009), <sup>14</sup>Rangwala et al. (2010), <sup>15</sup>Seidel and Free (2003), <sup>16</sup>Shrestha et al. (1999), <sup>17</sup>Vuille et al. (2003), <sup>18</sup>Vuille and Bradley (2000), <sup>19</sup>You et al. (2010)

| Altitudinal gradient in the warming rate                                       | Observations            |                        |                            | Models              |                  |                            |
|--------------------------------------------------------------------------------|-------------------------|------------------------|----------------------------|---------------------|------------------|----------------------------|
|                                                                                | T <sub>min</sub>        | T <sub>max</sub>       | T <sub>avg</sub>           | T <sub>min</sub>    | T <sub>max</sub> | T <sub>avg</sub>           |
| Increases with elevation                                                       | Annual <sup>2,5a</sup>  | Annual <sup>2,16</sup> | Annual <sup>8,12,15b</sup> | Annual <sup>9</sup> | –                | Annual <sup>14</sup>       |
|                                                                                | Winter <sup>2,6,9</sup> |                        |                            | Winter <sup>9</sup> |                  | Winter <sup>3,4,7,14</sup> |
|                                                                                | Spring <sup>13</sup>    | Summer <sup>13</sup>   | Seasonal <sup>13</sup>     | Spring <sup>9</sup> |                  | Spring <sup>3,7,14</sup>   |
|                                                                                | Autumn <sup>13</sup>    |                        |                            |                     |                  |                            |
| Decreases with elevation                                                       | Winter <sup>2</sup>     | Winter <sup>13</sup>   | Annual <sup>10,18</sup>    | –                   | –                |                            |
|                                                                                |                         |                        | Winter <sup>3</sup>        |                     |                  |                            |
|                                                                                |                         |                        | Autumn <sup>3</sup>        |                     |                  |                            |
| No significant gradient                                                        | –                       | Annual <sup>1</sup>    | Annual <sup>3,19</sup>     | –                   | –                | Annual <sup>3</sup>        |
|                                                                                |                         |                        | Seasonal <sup>17,19</sup>  |                     |                  |                            |
| No significant gradient but largest warming rates associated with 0°C isotherm |                         |                        | Annual <sup>11</sup>       |                     |                  | Spring <sup>3</sup>        |
|                                                                                |                         |                        | Spring <sup>3</sup>        |                     |                  |                            |

<sup>a</sup> No significant gradient but greater warming at higher elevations relative to regions between 0–500 m

<sup>b</sup> Greater warming at higher elevations in tropics and a mixed result for extratropics

As discussed in the previous section, there are plausible reasons why elevation-dependent climate responses might arise. These include elevation based differential changes in climate drivers, such as snow/ice cover, clouds, water vapor, aerosols, and soil moisture, or differential sensitivities of surface warming to changes in these drivers at different elevations. However, mountain systems are inherently difficult to understand owing to their complex topography, which leads to a high level of spatial and temporal variability in their climatic responses. Both observations and models are currently inadequate to provide us with a definitive understanding of the climate change signal in high elevation regions. There is a serious deficiency in weather observations along elevation gradients with generally poor observations in mid to high elevations, and only a few climate variables are usually observed. Satellite retrievals can help fill in some of the missing gaps in space and time as well as provide additional climate variables.

On the other hand, climate models can provide many more climate variables to explore feedbacks within the system, but they don't simulate realistic local-scale atmospheric processes until resolved at 1–6 km scale (Rasmussen et al. 2011). Simulations at these scales are computationally intensive and only recently have realizations been made at such scales. In the near future, these simulations should improve our understanding of elevation-based climate sensitivities in mountains. Nonetheless, we will still be challenged by the inadequacy in our observations to validate these simulations.

One reason why we cannot reconcile all of the studies summarized in this paper is that the analyses vary. For example, we cannot compare a study that analyzed averaged daily temperature with another that examined daily minimum temperature because these parameters respond differently to different climate drivers. For the same reason, we

cannot compare annual trends from one study with seasonal trends in another. It also becomes more difficult to generalize when a climate variable is less sensitive to a specific climate driver, but instead is influenced by several climate drivers. Then there is a greater likelihood that the elevation-based signal will be lost in the noise. For example, it may be more likely to find elevation sensitivity in minimum temperatures in winter but not find such sensitivity in annual mean temperature for the same region. Furthermore, differences can arise from the location of observation stations within the complex topography of the mountain region, and on a larger scale from the location of the mountain region in relation to rest of the continent.

When investigating elevation-dependent sensitivities to climate change, it may be preferable to examine more sensitive variables such as the daily minimum and maximum temperatures for a particular season. Moreover, such variables are likely to be more relevant for studying the impacts of climate change on ecosystems. For example, changes in wintertime minimum temperatures affect the survival of the bark beetle and its impact on the conifer forest in the Rocky Mountains (e.g., Kurz et al. 2008), or the impact of increases in summertime maximum air temperature on stream temperatures can affect the survival of a particular species of fish (e.g., Merten et al. 2010).

Additional difficulties in reconciling all of the studies here arise because of the spatial and temporal differences in the studies and the influence of climate variability. Both of these differences introduce statistical uncertainties because we know that neither spatial nor temporal changes in temperature will be uniform globally. In some regions and during specific periods, temperatures will be increasing faster than the global average, while in other regions they will be increasing more slowly or even decreasing. There are similarities between some of the mechanisms associated with enhanced warming rates in mountains and enhanced warming rates in the Arctic region. Both have significant snow and ice at the surface, are very cold in winter, and have generally low concentrations of atmospheric water vapor in winter. The snow/ice-albedo feedback is important in the Arctic Ocean, and most of the mountain studies that address it find it to be important there, too. Chen et al. (2006a) showed that increasing water vapor in the Arctic could enhance winter warming rates because the sensitivity of downward longwave radiation to water vapor is much greater when the atmosphere is drier, as commonly found in winter. A similar effect can occur in high mountain regions in winter (Ruckstuhl et al. 2007; Rangwala et al. 2010).

Our review suggests that high elevation regions will remain sensitive to the projected warming during the 21st century and that we will need to improve our understanding of how different climate drivers influence changes in high mountain regions. An essential requirement for this is to increase climate monitoring of high elevations sites. This should also include monitoring of a greater number of climate parameters that help to better assess energy fluxes and moisture availability at the land surface. Greater use of remote sensing tools and high-resolution climate modeling will be required to augment the ground observations. Nevertheless, it will still require a comprehensive ground observation network to support and validate these products.

**Acknowledgements** We are very thankful to the three anonymous reviewers for their time and insightful comments that have significantly improved our manuscript. We thank G. Greenwood for advising us to undertake this work and M. Vuille for providing us the temperature trend calculations for tropical Andes. IR acknowledges the support of the UCAR PACE fellowship for this work, and the technical and material assistance received at NOAA ESRL's Physical Sciences Division. Partial support for JRM was provided by Project 32103 of the New Jersey Agricultural Experiment Station. This work was also partially supported by a grant from the National Science Foundation (AGS-1064326).

## References

- Albrecht BA (1989) Aerosols, cloud microphysics, and fractional cloudiness. *Science* 245:1227
- Ames A (1998) A documentation of glacier tongue variations and lake development in the Cordillera Blanca, Peru. *Zeitschrift für Gletscherkunde und Glazialgeologie* 34:1–26
- Archer DR, Fowler HJ (2004) Spatial and temporal variations in precipitation in the Upper Indus Basin, global teleconnections and hydrological implications. *Hydrol Earth Syst Sci* 8:47–61
- Arnell NW (2003) Effects of IPCC SRES emissions scenarios on river runoff: a global perspective. *Hydrol Earth Syst Sci* 7:619–641
- Barry RG (2001) ‘Mountain Climate Change and Cryospheric Responses: A Review’, World Mountain Symposium 2001, World Mountain Forum
- Beniston M (2003) Climatic change in mountain regions: a review of possible impacts. *Clim Chang* 59:5–31
- Beniston M, Rebetez M (1996) Regional behavior of minimum temperatures in Switzerland for the period 1979–1993. *Theor Appl Climatol* 53:231–243
- Beniston M, Rebetez M, Giorgi F, Marinucci M (1994) An analysis of regional climate change in Switzerland. *Theor Appl Climatol* 49:135–159
- Beniston M, Diaz H, Bradley R (1997) Climatic change at high elevation sites: an overview. *Clim Chang* 36:233–251
- Bhutiyan M, Kale V, Pawar N (2007) Long-term trends in maximum, minimum and mean annual air temperatures across the Northwestern Himalaya during the twentieth century. *Clim Chang* 85:159–177
- Bhutiyan M, Kale V, Pawar N (2010) Climate change and the precipitation variations in the northwestern Himalaya: 1866–2006. *Int J Climatol* 30:535–548
- Bradley RS, Keimig FT, Diaz HF (2004) Projected temperature changes along the American cordillera and the planned GCOS network. *Geophys Res Lett* 31:L16210
- Bradley RS, Keimig FT, Diaz HF, Hardy DR (2009) Recent changes in freezing level heights in the Tropics with implications for the deglaciation of high mountain regions. *Geophys Res Lett* 36:L17701
- Ceppi P, Scherrer S, Fischer A, Appenzeller C (2010) Revisiting Swiss temperature trends 1959–2008. *Int J Climatol*
- Chen B, Chao W, Liu X (2003) Enhanced climatic warming in the Tibetan Plateau due to doubling CO<sub>2</sub>: a model study. *Clim Dyn* 20:401–413
- Chen Y, Aires F, Francis JA, Miller JR (2006a) Observed relationships between Arctic longwave cloud forcing and cloud parameters using a neural network. *J Clim* 19:4087–4104
- Chen S, Liu Y, Thomas A (2006b) Climatic change on the Tibetan Plateau: potential evapotranspiration trends from 1961–2000. *Clim Chang* 76:291–319
- Clow DW (2010) Changes in the timing of snowmelt and streamflow in Colorado: a response to recent warming. *J Clim* 23:2293–2306
- Dai A, Trenberth KE, Karl TR (1999) Effects of clouds, soil moisture, precipitation, and water vapor on diurnal temperature range. *J Clim* 12:2451–2473
- Daly C, Halbleib M, Smith JI, Gibson WP, Doggett MK, Taylor GH, Curtis J, Pasteris PP (2008) Physiographically sensitive mapping of climatological temperature and precipitation across the conterminous United States. *Int J Climatol* 28:2031–2064
- Dettinger MD, Cayan DR (1995) Large-scale atmospheric forcing of recent trends toward early snowmelt runoff in California. *J Clim* 8:606–623
- Diaz HF, Bradley RS (1997) Temperature variations during the last century at high elevation sites. *Clim Chang* 36:253–279
- Diaz H, Eischeid J (2007) Disappearing ‘alpine tundra’, Köppen climatic type in the western United States. *Geophys Res Lett* 34:L18707
- Diaz HF, Graham NE (1996) Recent changes in tropical freezing heights and the role of sea surface temperature. *Nature* 383:152–155
- Duan A, Wu G (2006) Change of cloud amount and the climate warming on the Tibetan Plateau. *Geophys Res Lett* 33:L22704
- Durre I, Wallace JM, Lettenmaier DP (2000) Dependence of extreme daily maximum temperatures on antecedent soil moisture in the contiguous United States during summer. *J Clim* 13:2641–2651
- Fan ZX, Bräuning A, Thomas A, Li JB, Cao KF (2010) Spatial and temporal temperature trends on the Yunnan Plateau (Southwest China) during 1961–2004. *Int J Climatol*
- Gaffen DJ, Santer BD, Boyle JS, Christy JR, Graham NE, Ross RJ (2000) Multidecadal changes in the vertical temperature structure of the tropical troposphere. *Science* 287:1242
- Giorgi F, Hurrell J, Marinucci M, Beniston M (1997) Elevation dependency of the surface climate change signal: a model study. *J Clim* 10:288–296

- Gutmann ED, Rasmussen RM, Liu C, Ikeda K, Gochis DJ, Clark MP, Dudhia J, Thompson G (2011) A Comparison of Statistical and Dynamical Downscaling of Winter Precipitation Over Complex Terrain. *J Clim* (In Press)
- Hansen J, Sato M, Ruedy R (1997) Radiative forcing and climate response. *J Geophys Res* 102:6831–6864
- Holden J, Rose R (2011) Temperature and surface lapse rate change: a study of the UK's longest upland instrumental record. *Int J Climatol*
- Jungo P, Beniston M (2001) Changes in the anomalies of extreme temperature anomalies in the 20th century at Swiss climatological stations located at different latitudes and altitudes. *Theor Appl Climatol* 69:1–12
- Kehrwald NM, Thompson L, Tandong Y, Mosley-Thompson E, Schotterer U, Alfimov V, Beer J, Eikenberg J, Davis M (2008) Mass loss on Himalayan glacier endangers water resources. *Geophys Res Lett* 35
- Kothawale D, Munot A, Kumar KK (2010) Surface air temperature variability over India during 1901–2007, and its association with ENSO. *Clim Res* 42:89–104
- Kurz WA, Dymond CC, Stinson G, Rampley GJ, Neilson ET, Carroll AL, Ebata T, Safranyik L (2008) Mountain pine beetle and forest carbon feedback to climate change. *Nature* 452:987–990
- Lau W, Kim M, Kim K, Lee W (2010) Enhanced surface warming and accelerated snow melt in the Himalayas and Tibetan Plateau induced by absorbing aerosols. *Environ Res Lett* 5:025204
- Liu X, Chen B (2000) Climatic warming in the Tibetan Plateau during recent decades. *Int J Climatol* 20:1729–1742
- Liu X, Yin ZY, Shao X, Qin N (2006) Temporal trends and variability of daily maximum and minimum, extreme temperature events, and growing season length over the eastern and central Tibetan Plateau during 1961–2003. *J Geophys Res* 111
- Liu X, Cheng Z, Yan L, Yin Z (2009) Elevation dependency of recent and future minimum surface air temperature trends in the Tibetan Plateau and its surroundings. *Glob Planet Chang* 68:164–174
- Liu S, Guo W, Xu J, Li J, Wei J, Yu P (2010) 'The changing pattern of glaciers during last 40 years in Tibetan Plateau, China', in AGU Fall Meeting, San Francisco, p. 0858
- Lu A, Kang S, Li Z, Theakstone W (2010) Altitude effects of climatic variation on Tibetan Plateau and its vicinities. *J Earth Sci* 21:189–198
- Merten EC, Hemstad NA, Eggert SL, Johnson LB, Kolka RK, Newman RM, Vondracek B (2010) Relations between fish abundances, summer temperatures, and forest harvest in a northern Minnesota stream system from 1997 to 2007. *Ecol Freshwat Fish* 19:63–73
- Messerli B, Ives JD (1997) Mountains of the world: a global priority, Parthenon Publishing Group
- Nijssen B, O'Donnell GM, Hamlet AF, Lettenmaier DP (2001) Hydrologic sensitivity of global rivers to climate change. *Clim Chang* 50:143–175
- Niu T, Chen L, Zhou Z (2004) The characteristics of climate change over the Tibetan Plateau in the last 40 years and the detection of climatic jumps. *Adv Atmos Sci* 21:193–203
- Nogués-Bravo D, Araújo MB, Errea M, Martínez-Rica J (2007) Exposure of global mountain systems to climate warming during the 21st Century. *Glob Environ Chang* 17:420–428
- Overpeck J, Udall B (2010) Dry times ahead. *Science* 328:1642
- Painter TH, Barrett AP, Landry CC, Neff JC, Cassidy MP, Lawrence CR, McBride KE, Farmer GL (2007) Impact of disturbed desert soils on duration of mountain snow cover. *Geophys Res Lett* 34:L12502
- Pederson GT, Graumlich LJ, Fagre DB, Kipfer T, Muhlfeld CC (2010) A century of climate and ecosystem change in Western Montana: what do temperature trends portend? *Clim Chang* 98:133–154
- Pepin N, Losleben M (2002) Climate change in the Colorado Rocky Mountains: free air versus surface temperature trends. *Int J Climatol* 22:311–329
- Pepin N, Lundquist J (2008) Temperature trends at high elevations: patterns across the globe. *Geophys Res Lett* 35:1–L14701
- Pepin N, Seidel DJ (2005) A global comparison of surface and free-air temperatures at high elevations. *J Geophys Res* 110:D03104
- Philippa R, Dürr B, Ohmura A, Ruckstuhl C (2005) Anthropogenic greenhouse forcing and strong water vapor feedback increase temperature in Europe. *Geophys Res Lett* 32:L19809
- Qin J, Yang K, Liang S, Guo X (2009) The altitudinal dependence of recent rapid warming over the Tibetan Plateau. *Clim Chang* 97:321–327
- Ramanathan V, Carmichael G (2008) Global and regional climate changes due to black carbon. *Nat Geosci* 1:221–227
- Rangwala I, Barsugli J, Cozzetto K, Neff J, Prairie J (2012) Mid-21st century projections in temperature extremes in the southern Colorado Rocky Mountains from regional climate models. *Clim Dyn*. doi:10.1007/s00382-011-1282-z
- Rangwala I, Miller JR (2010) Twentieth century temperature trends in Colorado's San Juan Mountains. *Arct Antarct Alp Res* 42:89–97
- Rangwala I, Miller JR (2011) 'Long-term Temperature Trends in the San Juan Mountains'. In: Blair R, Bracksieck G (eds) EASTERN SAN JUAN MOUNTAINS: Their Geology, Ecology and Human History, University Press of Colorado

- Rangwala I, Miller J, Xu M (2009) Warming in the Tibetan Plateau: possible influences of the changes in surface water vapor. *Geophys Res Lett* 36:L06703
- Rangwala I, Miller J, Russell G, Xu M (2010) Using a global climate model to evaluate the influences of water vapor, snow cover and atmospheric aerosol on warming in the Tibetan Plateau during the twenty-first century. *Clim Dyn* 34:859–872
- Rasmussen R, Liu C, Ikeda K, Gochis D, Yates D, Chen F, Tewari M, Barlage M, Dudhia J, Yu W, Miller K, Arsenault K, Grubišić V, Thompson G, Gutmann E (2011) High-resolution coupled climate runoff simulations of seasonal snowfall over Colorado: a process study of current and warmer climate. *J Clim* 24:3015–3048
- Ray AJ, Barsugli JJ, Averyt KB (2008) The observed record of Colorado climate (Chapter 2), in *Climate Change in Colorado, a report for the Colorado Water Conservation Board*. University of Colorado Press, Boulder
- Rikiishi K, Nakasato H (2006) Height dependence of the tendency for reduction in seasonal snow cover in the Himalaya and the Tibetan Plateau region, 1966–2001. *Ann Glaciol* 43:369–377
- Ruckstuhl C, Philipona R, Morland J, Ohmura A (2007) Observed relationship between surface specific humidity, integrated water vapor, and longwave downward radiation at different altitudes. *J Geophys Res* 112:D03302
- Russell GL, Miller JR, Rind D (1995) A coupled atmosphere-ocean model for transient climate change studies. *Atmosphere-Ocean* 33:683–730
- Saunders S, Montgomery CH, Easley T, Spencer T, Organization RMC, Council, N.R.D. (2008) *Hotter and drier: the West's changed climate*, Rocky Mountain Climate Organization, p. 54
- Seidel D, Free M (2003) Comparison of lower-tropospheric temperature climatologies and trends at low and high elevation radiosonde sites. *Clim Chang* 59:53–74
- Serreze M, Walsh J, Chapin FS, Osterkamp T, Dyurgerov M, Romanovsky V, Oechel W, Morison J, Zhang T, Barry R (2000) Observational evidence of recent change in the northern high-latitude environment. *Clim Chang* 46:159–207
- Shrestha A, Wake C, Mayewski P, Dibb J (1999) Maximum temperature trends in the Himalaya and its vicinity: an analysis based on temperature records from Nepal for the period 1971–94. *J Clim* 12:2775–2786
- Trenberth KE, Jones PD, Ambenje P, Bojariu R, Easterling D, Klein Tank A, Parker D, Rahimzadeh F, Renwick JA, Rusticucci M, Soden B, Zhai P (2007) Observations: surface and atmospheric climate change. In: Solomon S, Qin D, Manning M, Chen Z, Marquis M, Averyt KB, Tignor M, Miller HL (eds) *Climate change 2007: the physical science basis: contribution of working group I to the fourth assessment report of the intergovernmental panel on climate change*. Cambridge University Press, Cambridge, UK, pp 235–336.
- Twomey S (1974) Pollution and the planetary albedo. *Atmos Environ* (1967) 8:1251–1256
- Urrutia R, Vuille M (2009) Climate change projections for the tropical Andes using a regional climate model: temperature and precipitation simulations for the end of the 21st century. *J Geophys Res* 114:D02108
- Vuille M, Bradley R (2000) Mean annual temperature trends and their vertical structure in the tropical Andes. *Geophys Res Lett* 27:3885–3888
- Vuille M, Bradley R, Werner M, Keimig F (2003) 20th century climate change in the tropical Andes: observations and model results. *Clim Chang* 59:75–99
- Vuille M, Francou B, Wagnon P, Juen I, Kaser G, Mark BG, Bradley RS (2008) Climate change and tropical Andean glaciers: Past, present and future. *Earth Sci Rev* 89:79–96
- Wang B, Bao Q, Hoskins B, Wu G, Liu Y (2008) Tibetan Plateau warming and precipitation changes in East Asia. *Geophys Res Lett* 35:L14702
- Williams M, Losleben M, Caine N, Greenland D (1996) Changes in climate and hydrochemical responses in a high-elevation catchment in the Rocky Mountains, USA. *Limnol Oceanogr* 939–946
- Xu B, Cao J, Hansen J, Yao T, Joswia DR, Wang N, Wu G, Wang M, Zhao H, Yang W, Liu X, He J (2009) Black soot and the survival of Tibetan glaciers. *Proc Natl Acad Sci* 106:22114–22118
- You Q, Kang S, Wu Y, Yan Y (2007) Climate change over the Yarlung Zangbo river basin during 1961–2005. *J Geogr Sci* 17:409–420
- You Q, Kang S, Pepin N, Yan Y (2008) Relationship between trends in temperature extremes and elevation in the eastern and central Tibetan Plateau, 1961–2005. *Geophys Res Lett* 35:L04704
- You Q, Kang S, Pepin N, Flügel W, Yan Y, Behrawan H, Huang J (2010) Relationship between temperature trend magnitude, elevation and mean temperature in the Tibetan Plateau from homogenized surface stations and reanalysis data. *Global Planet Change*

Kathleen E. Trever  
Deputy Attorney General  
Idaho Department of Fish and Game  
P.O. Box 25  
Boise, Idaho 83707

Subject: Touhy Request

Dear Ms. Trever,

On May 26, 2015, we received your request for Bridget Fahey to assist as an expert witness in a matter in Federal District court for the District of Idaho. At issue is a biological opinion (Opinion) prepared by the U. S. Fish and Wildlife Service (Service) for the Service's Division of Management Authority's oversight of international trade of bobcat pelts that are exported pursuant to the Convention on International Trade in Endangered Species (CITES). Of specific interest is the scope of the Opinion's incidental take statement.

Ms. Fahey has been the Service's lead on the consultation since 2007 and is currently the Service employee with the greatest knowledge of the biological opinion and its incidental take statement. Therefore, we are approving your request for Bridget Fahey to assist as an expert witness and provide an affidavit. Based upon our review of, and ongoing monitoring activities covered by the biological opinion and its incidental take statement, we support your view that the incidental take statement exempts take of Canada lynx that are incidentally taken under Idaho's bobcat trapping program.

Your letter also requested that Ms. Fahey confirm that the Lynx Conservation and Assessment Strategy circulated in August 2013 was a draft document. To clarify, the August 2013 version of the strategy is not considered a draft; rather, it is an updated version of the document (Version 3) and is considered the latest version until such time as it is revised. Finally, you requested that Ms. Fahey confirm the Service's position regarding the trapping of a lynx on the Salmon-Challis National Forest as set for in a letter dated March 12, 2012 to John Marvel.

If you have further questions, please contact Ms. Fahey at [bridget\\_fahey@fws.gov](mailto:bridget_fahey@fws.gov).

Sincerely,

Regional Director

**Comment [BF1]:** Will need R1 help on how to address. Should we provide a name in R1 who would be the best person to do this? Or is it pretty straightforward and I could handle?

Kathleen E. Trever  
Deputy Attorney General  
Idaho Department of Fish and Game  
P.O. Box 25  
Boise, Idaho 83707

Subject: Touhy Request

Dear Ms. Trever,

On May 26, 2015, we received your request for Bridget Fahey to assist as an expert witness in a matter in Federal District court for the District of Idaho. At issue is a biological opinion (Opinion) prepared by the U. S. Fish and Wildlife Service (Service) for the Service's Division of Management Authority's oversight of international trade of bobcat pelts that are exported pursuant to the Convention on International Trade in Endangered Species (CITES). Of specific interest is the scope of the Opinion's incidental take statement.

Ms. Fahey has been the Service's lead on the consultation since 2007 and is currently the Service employee with the greatest knowledge of the biological opinion and its incidental take statement. Therefore, we are approving your request for Bridget Fahey to assist as an expert witness and provide an affidavit. Based upon our review of, and ongoing monitoring activities covered by the biological opinion and its incidental take statement, we support your view that the incidental take statement exempts take of Canada lynx that are incidentally taken under Idaho's bobcat trapping program.

Your letter also requested that Ms. Fahey confirm that the Lynx Conservation and Assessment Strategy circulated in August 2013 was a draft document. To clarify, the August 2013 version of the strategy is not considered a draft; rather, it is an updated version of the document (Version 3) and is considered the latest version until such time as it is revised. Finally, you requested that Ms. Fahey confirm the Service's position regarding the trapping of a lynx on the Salmon-Challis National Forest as set for in a letter dated March 12, 2012 to John Marvel. Ms. Fahey was not involved with that letter and as such is not in a position to testify on its contents.

If you have further questions, please contact Ms. Fahey at [bridget\\_fahey@fws.gov](mailto:bridget_fahey@fws.gov).

Sincerely,

Regional Director

Kathleen E. Trever  
Deputy Attorney General  
Idaho Department of Fish and Game  
P.O. Box 25  
Boise, Idaho 83707

Subject: Touhy Request

Dear Ms. Trever,

On May 26, 2015, we received your request for Bridget Fahey to assist as an expert witness in a matter in Federal District court for the District of Idaho. At issue is a biological opinion (Opinion) prepared by the U. S. Fish and Wildlife Service (Service) for the Service's Division of Management Authority's oversight of international trade of bobcat pelts that are exported pursuant to the Convention on International Trade in Endangered Species (CITES). Of specific interest is the scope of the Opinion's incidental take statement.

Ms. Fahey has been the Service's lead on the consultation since 2007 and is currently the Service employee with the greatest knowledge of the biological opinion and its incidental take statement. Therefore, we are approving your request for Bridget Fahey to assist as an expert witness and provide an affidavit. Based upon our review of, and ongoing monitoring activities covered by the biological opinion and its incidental take statement, we support your view that the incidental take statement exempts take of Canada lynx that are incidentally taken under Idaho's bobcat trapping program.

Your letter also requested that Ms. Fahey confirm that the Lynx Conservation and Assessment Strategy circulated in August 2013 was a draft document. To clarify, the August 2013 version of the strategy is not considered a draft; rather, it is an updated version of the document (Version 3) and is considered the latest version until such time as it is revised. Finally, you requested that Ms. Fahey confirm the Service's position regarding the trapping of a lynx on the Salmon-Challis National Forest as set for in a letter dated March 12, 2012 to John Marvel.

If you have further questions, please contact Ms. Fahey at [bridget\\_fahey@fws.gov](mailto:bridget_fahey@fws.gov).

Sincerely,

Regional Director

**Comment [BF1]:** Will need R1 help on how to address. Should we provide a name in R1 who would be the best person to do this? Or is it pretty straightforward and I could handle?

## Lynx Incidental Capture Report

Report No. 2013-TRP006

Lynx ID: N/A

Name of Individual Reporting Capture: [REDACTED] trapper, [REDACTED]  
[REDACTED]

Name of Biologist/Warden Responding to Report: Wdn. Brad Richard, Biologists Mark Caron and Tom Schaeffer.

Type of Capture: Trap

*Set type:* dirt hole

*Trap type and size:* Foothold – #3, 4 coils, with offset jaws

*Jaw spread and swivels:* 6 ½ inches, 2 swivels

*Staking:* drag, 4 ft. chain

*Bait:*

*Lure:* urine

*Visibility of Bait:* None

*Legal Set?* Yes

Location of Capture: Grand Lake Stream, Off U Rd.

Wildlife Management District: 19

GPS Coordinates (UTM preferred): 602276, 5014377

GPS Map Datum (NAD 83 preferred): WGS84/NAD83

Date of Capture: 10/24/13

Disposition of Lynx: Alive, sedated and released on-site

Age/Sex: adult female; 19 lbs

### Description of events

**Response:** At 0844, Wdn. Richard responded to the call from a trapper that caught a lynx. Wdn Richard called the lynx hotline to report the capture and initiate a response. MDIFW biologists Mark Caron and Tom Schaeffer and Wdn. Richard responded. The animal was sedated, examined for injuries and given supportive care (hydrating fluids, antibiotics, monitor vital signs, treat injuries following established procedures) before being released on-site. Wdn Richard examined the trap and interviewed the trapper for compliance with State trapping laws. The set was legal. Biologist Jen Vashon notified USFWS Special Agent Eric Holmes.

**Weather conditions:** Overnight: 32 degrees F and clear. Daytime: 40 degrees F with clear skies.

**Disturbance:** No disturbance

**Assessment of the lynx:** The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, and torso were normal. Slight swelling on the capture foot. There were no other injuries on the lynx or capture foot. Body temperature was normal and lynx was kept warm. No broken, chipped, or missing teeth. The animal was a healthy adult female and weighed 19lbs. The animal was given antibiotics and hydrating fluids. The animal was weighed and measured. The lynx was not ear tagged, since there were two other lynx that needed to be released. The lynx was given an injection of yohimbine to reverse the effects of the sedative and observed during recovery in a portable dog crate. Upon recovery, although some effects of the sedation, she walked away putting full-weight on all four legs.

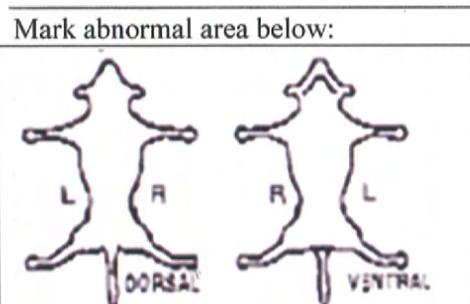
See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information.  
Report prepared by: Jennifer Vashon 11/4/13;

DATE: 10/24/13 **Incidental Lynx Capture Form** Lynx ID# N/A  
 Observers: Coxon, M, Richard B.  
 Recorder: Schaeffer Town: Glenn Lake Stream Twp Time when manageable: 11:08 am  
 Road Name: OFF U-Road North County: Wash Time of recovery/ release: 12:50  
 UTMe 602276 UTMn 5014377 Datum: WGS84 NAD27 NAD83

|                      | Ketaset Concentration      | Xylazine Concentration     | Time         | Delivery Method | Additional Drug (If Needed)     | Amount             |
|----------------------|----------------------------|----------------------------|--------------|-----------------|---------------------------------|--------------------|
| 1 <sup>st</sup> Dose | <u>200 mg/ml</u><br>0.5 ml | <u>400 mg/ml</u><br>0.1 ml | <u>11:00</u> | <u>jab</u>      | Antibiotic (SCorIM) 0.5cc/10lbs | <u>1.0cc</u>       |
| 2 <sup>nd</sup> Dose |                            |                            |              |                 | Yohimbine(IVorIM) 0.5cc/20lbs   | <u>0.5cc 11:45</u> |
| 3 <sup>rd</sup> Dose |                            |                            |              |                 | Midazolam(IVorIM) 0.5cc/slowly  |                    |
| 4 <sup>th</sup> Dose |                            |                            |              |                 | Epinephrine(SCorIM) 0.5cc/10lb  |                    |
| Comments:            |                            |                            |              |                 | Doxapram (IVorSL) 1.0cc/22lbs   |                    |

Sex: M  F  Estimated Age: Kitten  Subadult  Adult  Year Born(if known) \_\_\_\_\_  
 Ear Tag#(Left) \_\_\_\_\_ (Right) \_\_\_\_\_ Tag Color: None

**Subjective (Body Condition):**  
 Poor  Fair  Good  Excellent   
**Objective** Normal  Abnormal   
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities



| Body Temperature          | Time         |
|---------------------------|--------------|
| <u>Normal - 101-102.5</u> |              |
| <u>100.8 F</u>            | <u>11:20</u> |
| <u>101.5 F</u>            | <u>11:30</u> |
| <u>101.5 F</u>            | <u>11:35</u> |
| F                         |              |

**Assessment:** \_\_\_\_\_  
**Plan:** Release/no sedation  Sedation: Treat in field  Assess + release due to 2 other captures pending Sedate/Transport to Vet  Euthanize

**Teeth:** Normal  Missing  Broken  Worn  Describe: dentition good Photo? side view (2) / front view   
**Coat Condition:** Prime  Summer  Shedding  Mange  Bare/Worn  Describe: \_\_\_\_\_  
**Capture Foot?** Left Front  Right Front  Left Rear  Right Rear   
**Capture Foot Injuries:** Yes or No Describe: Slight swelling, compression mark, no wound <sup>open hand</sup> <sub>compression applied</sub>

| BODY MEASUREMENTS                                                               |                  | LYNX IDENTIFICATION                |                                                      |                            |                                          |
|---------------------------------------------------------------------------------|------------------|------------------------------------|------------------------------------------------------|----------------------------|------------------------------------------|
| Weight (Actual or Estimate)                                                     | <u>19.12</u> lbs | Lynx                               |                                                      | Bobcat                     |                                          |
| Total Length                                                                    | <u>940</u> mm    | Tail Banding Pattern               | No Bands <input checked="" type="checkbox"/>         | 1 Band                     | 2 Bands 3 Bands                          |
| Chest Girth                                                                     | <u>39.5</u> mm   | Color of tip of tail               | Completely Black <input checked="" type="checkbox"/> | Black on top/white beneath |                                          |
| DNA Sample: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |                  | Hind Foot Coloration               | Grey <input checked="" type="checkbox"/>             | Dark Brown                 |                                          |
| Hair Blood Tissue                                                               | Mouth Swab       | Ear Tuft Length                    | >1 inch                                              | <1 inch                    |                                          |
| Parasites: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  | Sample Y N       | Toe Coloration (circle white toes) | Left Front (I M M O)                                 | Right Front (I M M O)      | Left Rear (I M M O) Right Rear (I M M O) |

Radio Collared: Y  N  Initial/Previously Collared Collar Works: Y  N  Make: LT Sirtrack ATS GPS SAT VHF  
 Frequency: \_\_\_\_\_ Replacement Collar Freq: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months Leather Circum: \_\_\_\_\_ mm

Comments: N 45° 16' 29.61"  
W 67° 41' 47.22"  
ear tuft length + toe coloration not recorded  
- dog crate - recovery  
- some effect of drug - wgt on all 4 ft. feet

Photos? YES  NO  Photo Number \_\_\_\_\_ Reviewed Data Sheet? YES  NO

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER \*advise caller to minimize disturbance to the animal \*

Date 10/24/2013 Time 8:19 AM IFW Staff collecting caller info: Wdn Brad Richard  
 Trapper/Individual Reporting [REDACTED]  
 Address [REDACTED] Phone number: [REDACTED]  
 Town: [REDACTED] LYNX ID (w/o disturbing cat)

|                                                        |               |     |    |
|--------------------------------------------------------|---------------|-----|----|
| Location Gravel pit                                    | Blacktip tail | Yes | No |
| GPS coordinates <u>067 41.764</u> W <u>45 16.527</u> N | Spotted       | Yes | No |
| GPS datum <u>WGS84</u> NAD27 NAD83                     | Eartufts      | Yes | No |
| Directions and meeting time:                           | Large feet    | Yes | No |
|                                                        | Grey legs     | Yes | No |

Circle all info that applies

Type of trap? Foot-hold Conibear Cage Animal still in trap? Yes No  
 When was trap last tended? Yesterday Alive Dead  
 Staking of Trap? Staked Drag Lynx appear injured? Yes No  
 Is animal entangled? Yes No Animal's Behavior Calm Sleeping Pacing  
 Disturbance at the site? Yes No Other: \_\_\_\_\_  
 Type of Disturbance: Vehicle traffic Hunters Equipment operation Animal disturbance  
 Current weather? Clear Rain Snow Windy Current temperature? 40  
 Overnight weather? Clear Rain Snow Windy Overnight temperature? 32

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation? Yes No  
 Unresponsive? Yes No  
 Broken bones? Yes No If yes, Compound non-compound  
 Bleeding? Yes No If yes, minor Major  
 Laceration? Yes No If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes No

## 5. Information when ON-SITE: Circle all information that applies

Conibear 110 120 160 220 Other: \_\_\_\_\_  
 Foothold trap type #1.75 #2 #3 MB 450 MB 550 Other: \_\_\_\_\_  
 Inside jaw spread 6 1/2" inches Number of Swivels? 2  
 Jaw type Padded Laminated Offset Number of coils: 4  
 Securing method Staked Drag Chain length: 4 Ft In-line spring? Yes No  
 Bait? Yes No Type: Dirt hole Visible? Yes No  
 Lure? Yes No Type: Urine Legal Set? Yes No

All people present 1 Wdn Brad Richard 2 [REDACTED] 3 Mark Caron  
 4 Tom Schaeffer 5 \_\_\_\_\_ 6 \_\_\_\_\_ 7 \_\_\_\_\_

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured? Yes Euthanized? no Taken to veterinarian? NO  
 Name&Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_

Comments:

# Call For Service

CFS Number: **WS13-022937**  
Date: **10/24/2013 8:43:41 AM**

## Call For Service

CFS Number **WS13-022937**  
Date **10/24/2013 8:43:41 AM**  
Dispatcher  
Call Source **0 - Phone**  
Received **8:44:02 AM**  
Dispatched **8:44:08 AM**  
Arrived **9:05:00 AM**  
Cleared **10:45:00 AM**  
Location **U Rd**  
City, State, Zip **Grand Lake Stream**  
Jurisdiction **W08 - Section 08**  
Grid **15621 - Grand Lake Stream Plt**  
Sector **WC42**  
Map  
X Coordinate  
Y Coordinate  
  
Reviewed By **10321 - Scott, Dan**

Complainant [REDACTED]  
Address **U Rd**  
City, State, Zip **Grand Lake Stream**  
Phone [REDACTED]  
Call type  
Reported Offense **6892 - Trapping - Other**  
Verified Offense **6892 - Trapping - Other**  
  
Tow Company  
Vehicle  
Vehicle License  
Disposition **2 - Inactive**  
Priority  
Classification  
  
Agency **MWS - Maine Warden Service**  
Case  
Reviewed On **11/1/2013 3:48:57 PM**

### Officers

10851 - Richard, Brad

Notes Richard 2187 2 OT Hours 20 miles C-1 called and stated that he had caught a lynx in his trap and the animal was alive. I called the Lynx hotline and responded to the scene. I waited until Biologists, Mark Caron and Tom Schaeffer arrived and then I left and went to the other lynx in Codyville. No trapping violations detected.  
CLOSE

=====  
CLOSED CALL FOR  
SERVICE=====

#### INCIDENT INFORMATION

-----CAD EVENT NUMBER: 130022937 OFFENSE CODE:  
wsre AGENCY: wm (CAD) JURISDICTION: ws (CAD) SECTOR:  
c8 (CAD) GRID: 621 (CAD) CREATED: 20131024 08:44:02 REPORTED:  
20131024 08:43:41 OCCURRENCE START: 20131024 -1 OCCURRENCE END: -1 -1  
CLOSED: 20131024 15:26:44 CALL TAKER: acox, d, or03  
DISPATCHER: acox, d, or03 MODIFIED BY: syankows, or03 [RESPONSIBLE  
MEMBER] MEMBER: [10851] richard, brad UNIT: ws2187 GROUP ID:  
warden [ATTENDED] [LOCATION] LAT/LON: , [INCIDENT DETAILS]2187:: lynx in  
trap=====

SUBJECTS=====

=

VEHICLES=====

# Call For Service

CFS Number: **WS13-022937**

Date: **10/24/2013 8:43:41 AM**

BUSINESSES=====

===

DISPOSITIONS=====

----- DISPOSITION-----

----- [DETAILS] CODE: 7629 DISPOSITION DATE/TIME:

20131024 15:26:48 DEVICE: or03 PERSON ID: syankows

[MISCELLANEOUS] CREATED DATE: 0 CREATED TIME: 0 MODIFIED BY

OPERATOR: syankows MODIFIED BY WORKSTATION: or03 LAST MODIFIED: 20131024

152642=====

==

MESSAGES=====

==

NCICReplies=====

== ACTIVITY

LISTS=====

INCIDENT

ASSOCIATIONS=====

=====

## Lynx Incidental Capture Report

Report No. 2013-TRP007

Lynx ID: LIC34

Name of Individual Reporting Capture: [REDACTED]

Name of Biologist/Warden Responding to Report: District Warden Brad Richards, Biologist Mark Caron and Tom Schaeffer

Type of Capture: Trap

*Trap type and size:* Foothold – #3 - 2 coils, offset jaws

*Jaw spread and swivels:* 6 ½ inches, 2 swivels

*Staking:* drag, 4 ft chain

*Bait:* meat

*Lure:* urine

*Visibility of Bait:* None

*Legal Set?* Yes

Location of Capture: Codyville near the town line of Waite, Tomah Dam Rd

Wildlife Management District: 19

GPS Coordinates (UTM preferred): 607569, 5029042

GPS Map Datum (NAD 83 preferred): NAD 83

Date of Capture: 10/24/13

Disposition of Lynx: Alive, sedated, treated, and taken to veterinarian – released on 10/25/13

Age/Sex: adult female; 20 lbs

### Description of events

**Response:** At 1017, Warden Brad Richards responded to the call from a trapper that he caught two lynx in the town of Waite (also see report 2013\_TRP008). MDIFW biologists Mark Caron and Tom Schaeffer were nearby responding to a previous lynx capture (report 2013\_TRP006). Wdn. Richards and biologists Mark Caron and Tom Schaeffer responded. The animal was sedated, examined for injuries and given supportive care (hydrating fluids, antibiotics, monitor vital signs, and injury treated following established procedures) before being transported to a veterinarian. Wdn. Richards examined the trap and interviewed the trapper for compliance with State trapping laws. The set was legal. MDIFW Biologist Jen Vashon notified USFWS Special Agent Eric Holmes of the capture.

**Weather conditions:** Overnight: 33 degrees F and windy. Daytime: 41 degrees F and windy.

**Disturbance:** None reported or observed at site

**Assessment of the lynx:** The animal was sedated and examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, and torso were normal.

**Extremities:** Laceration on the hind left leg 1 ½ -2 inches long above tendon. Since body temperature was slightly above normal, lynx was cooled following established procedures. No broken, chipped, or missing teeth were observed. The animal was a female and weighed 20lbs. The lynx was given antibiotics, fluids, and the wound was irrigated and sprayed with aluspray. The lynx was then transported to and examined by a Maine veterinarian. The veterinarian shaved the fur around the wound, irrigated and administered aluspray and antibiotics, and recommended that the lynx be released. Although the veterinarian agreed with our protocol for seeking additional injury assessment, the injury did not require additional treatment or long-term care. The lynx was given ear tags and released near the capture location on the afternoon of 10/25.

See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information. Report prepared by: Jennifer Vashon 11/4/13;

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER *\*advise caller to minimize disturbance to the animal\**

Date 10/24/2013 Time 1012 IFW Staff collecting caller info: Wdn. Brad Richard  
 Trapper/Individual Reporting [REDACTED]  
 Address [REDACTED] Phone number: [REDACTED]  
 Town: Codyville Pit **LYNX ID (w/o disturbing cat)**  
 Location Tomah Dam Rd Blacktip tail **Yes** No  
 GPS coordinates 067 37.512 W 45 24 .42 N Spotted **Yes** No  
 GPS datum **WGS84** NAD27 NAD83 Eartufts **Yes** No  
 Directions and meeting time: Large feet **Yes** No  
 Grey legs **Yes** No

*Circle all info that applies*

Type of trap? **Foot-hold** Conibear Cage Animal still in trap? **Yes** No  
 When was trap last tended? **yesterday** Alive Dead  
 Staking of Trap? Staked **Drag** Lynx appear injured? Yes **No**  
 Is animal entangled? Yes **No** Animal's Behavior **Calm** Sleeping Pacing  
 Disturbance at the site? Yes **No** Other: \_\_\_\_\_  
 Type of Disturbance: Vehicle traffic Hunters Equipment operation Animal disturbance

Current weather? Clear Rain Snow **Windy** Current temperature? **41**  
 Overnight weather? Clear Rain Snow **Windy** Overnight temperature? **33**

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation? **Yes** No  
 Unresponsive? Yes **No**  
 Broken bones? Yes **No** If yes, Compound non-compound  
 Bleeding? **Yes** No If yes, minor Major  
 Laceration? **Yes** No If yes, superficial (through 1st layer of skin) **major (deep requires sutures)**  
 Limping/dragging limb? Yes **No**

## 5. Information when ON-SITE: *Circle all information that applies*

Conibear 110 120 160 220 Other: \_\_\_\_\_  
 Foothold trap type #1.75 #2 **#3** MB 450 MB 550 Other: \_\_\_\_\_  
 Inside jaw spread **6 1/2"** inches Number of Swivels? **2**  
 Jaw type Padded Laminated **Offset** Number of coils: **2**  
 Securing method Staked **Drag** Chain length: **4ft** In-line spring? Yes **No**  
 Bait? **Yes** No Type: **Meat** Visible? Yes **No**  
 Lure? **Yes** No Type: **Urine** Legal Set? **Yes** No

All people present [REDACTED] Wdn. Brad Richard 3 Mark Caron  
 4 Tom Schaeffer 5 \_\_\_\_\_ 6 \_\_\_\_\_ 7 \_\_\_\_\_

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured? **N** Euthanized? **N** Taken to veterinarian? **Y**

Name&Location of Veterinarian: [REDACTED] Phone #: \_\_\_\_\_

Comments:

**DATE:** 10/24/13 **Incidental Lynx Capture Form** **Lynx ID#** L1C34  
**Observers:** Caron Schoof **Town:** White / Codyville  
**Recorder:** Caron **County:** Washington  
**Road Name:** Tonah Dam Rd. **Datum:** WGS84 NAD27 NAD83  
**UTMe** 0607569 **UTMn** 5029042 **Time when manageable:** 1:18 pm  
**Time of recovery/ release:** transported to vet

|                      | Ketaset Concentration         | Xylazine Concentration | Time | Delivery Method | Additional Drug (If Needed)     | Amount |
|----------------------|-------------------------------|------------------------|------|-----------------|---------------------------------|--------|
| 1 <sup>st</sup> Dose | 0.5 ml                        | 0.05 ml                | 1:02 | Job             | Antibiotic (SCorIM) 0.5cc/10lbs |        |
| 2 <sup>nd</sup> Dose |                               |                        |      |                 | Yohimbine(IVorIM) 0.5cc/20lbs   |        |
| 3 <sup>rd</sup> Dose |                               |                        |      |                 | Midazolam(IVorIM) 0.5cc/slowly  |        |
| 4 <sup>th</sup> Dose |                               |                        |      |                 | Epinephrine(SCorIM) 0.5cc/10lb  |        |
| Comments:            | Doxapram (IVorSL) 1.0cc/22lbs |                        |      |                 |                                 |        |

**Sex:** M  F **Estimated Age:** Kitten Subadult Adult **Year Born(if known)** \_\_\_\_\_  
**Ear Tag#(Left)** \_\_\_\_\_ **(Right)** \_\_\_\_\_ **Tag Color:** \_\_\_\_\_

**Subjective (Body Condition):** Poor  Fair  Good  Excellent   
**Objective** Normal  Abnormal   
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities

Mark abnormal area below:

| Body Temperature   | Time    |
|--------------------|---------|
| Normal - 101-102.5 |         |
| 103.2 F            | 1:30 pm |
| 102.4 F            | 1:40 pm |
| 102.1 F            | 1:55 pm |
| F                  |         |

**Assessment:** caught on back right leg  
 back left leg had open wound exposing tendon / back right had laceration - treated  
**Plan:** Release/no sedation  Sedation Treat in field Fluids  Sedate/Transport to Vet  Euthanize

**Teeth:** Normal Missing  Broken  Worn  Describe: \_\_\_\_\_ Photo? side view (2) / front view   
**Coat Condition:** Prime Summer  Shedding  Mange  Bare/Worn  Describe: \_\_\_\_\_  
**Capture Foot?** Left Front  Right Front  Left Rear  Right Rear   
**Capture Foot Injuries:** Yes  or No  Describe: laceration - treated (irrigate, flush)

| BODY MEASUREMENTS                                                                      |            | LYNX IDENTIFICATION         |                   |                            |                     |
|----------------------------------------------------------------------------------------|------------|-----------------------------|-------------------|----------------------------|---------------------|
| Weight (Actual or Estimate)                                                            | 20 lbs     | Lynx                        |                   | Bobcat                     |                     |
| Total Length                                                                           | mm         | <b>Tail Banding Pattern</b> | No Bands          | 1 Band                     | 2 Bands 3 Bands     |
| Chest Girth                                                                            | mm         | <b>Color of tip of tail</b> | Completely Black  | Black on top/white beneath |                     |
| <b>DNA Sample:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |            | <b>Hind Foot Coloration</b> | Grey              | Dark Brown                 |                     |
| Hair Blood Tissue                                                                      | Mouth Swab | <b>Ear Tuft Length</b>      | >1 inch           | <1 inch                    |                     |
| <b>Parasites:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |            | <b>Toe Coloration</b>       | <u>Left Front</u> | <u>Right Front</u>         | <u>Left Rear</u>    |
| Sparse Abundant                                                                        | Sample Y N | (circle white toes)         | (I M M O)         | (I M M O)                  | (I M M O) (I M M O) |

**Radio Collared:** Y  N **Initial/Previously Collared**  **Collar Works:** Y  N  **Make:** LT Sirtrack ATS GPS SAT VHF  
**Frequency:** \_\_\_\_\_ **Replacement Collar Freq:** \_\_\_\_\_ **Collar Life:** \_\_\_\_\_ months **Leather Circum:** \_\_\_\_\_ mm

**Comments:** Vet examined, cleaned wound similar to field staff & advised release. Released 10/25/13 administer antibiotic

**Photos?** YES  NO  **Photo Number** \_\_\_\_\_ **Reviewed Data Sheet?** YES  NO

DATE: 10/25/13  
 Observers: J. Vashon  
 Recorder: J. Vashon Town: [redacted]  
 Road Name: [redacted] County: [redacted]  
 Lynx ID# \_\_\_\_\_  
 Time when manageable: 1030  
 Time of recovery/ release: \_\_\_\_\_  
 UTMe \_\_\_\_\_ UTMn \_\_\_\_\_ Datum: WGS84 NAD27 NAD83

| Torp                                       | Ketaset Concentration | Xylazine-Dex Concentration | Time        | Delivery Method     | Additional Drug (If Needed) | Amount              |
|--------------------------------------------|-----------------------|----------------------------|-------------|---------------------|-----------------------------|---------------------|
| <u>10mg/ml</u>                             | <u>100 mg/ml</u>      | <u>0.5 mg/ml</u>           |             |                     | <u>Conventional</u>         |                     |
| <u>1st Dose 0.33</u>                       | <u>0.33 ml</u>        | <u>0.33 ml</u>             | <u>0933</u> | <u>syringe poke</u> | <u>Antibiotic (SCorIM)</u>  | <u>0.5cc/10lbs</u>  |
| <u>2nd Dose 0.27</u>                       | <u>0.27 ml</u>        | <u>0.27 ml</u>             | <u>0954</u> | <u>syringe poke</u> | <u>Yohimbine (IVorIM)</u>   | <u>0.5cc/20lbs</u>  |
| <u>3rd Dose 0.27</u>                       | <u>0.2 ml</u>         | <u>0.27 ml</u>             | <u>1022</u> | <u>syringe poke</u> | <u>Midazolam (IVorIM)</u>   | <u>0.5cc/slowly</u> |
| <u>4th Dose</u>                            | <u>ml</u>             | <u>ml</u>                  |             |                     | <u>Epinephrine (SCorIM)</u> | <u>0.5cc/10lb</u>   |
| Comments: <u>Ketaset/Dox/Dormitor/Torb</u> |                       |                            |             |                     | <u>Doxapram (IVorSL)</u>    | <u>1.0cc/22lbs</u>  |

Sex: M  F  Estimated Age: Kitten Subadult  Adult  Year Born (if known) \_\_\_\_\_  
 Ear Tag# (Left) 235 (Right) 235 Tag Color: yellow

**Subjective (Body Condition):** Poor  Fair  Good  Excellent   
**Objective** Normal  Abnormal   
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities

Mark abnormal area below:

| Body Temperature          | Time        |
|---------------------------|-------------|
| <u>Normal - 101-102.5</u> |             |
| <u>104 F</u>              | <u>1040</u> |
| <u>103.1 F</u>            | <u>1055</u> |
| <u>F</u>                  |             |
| <u>F</u>                  |             |

**Assessment:** 3 small punctures left hind (capture foot) - mild lacer 1cm, no vital structure thru 1st layer of skin; right hind 1 1/2-2" superficial laceration above hock

**Plan:** Release/no sedation  Sedation: Treat in field \_\_\_\_\_ Sedate/Transport to Vet \_\_\_\_\_ Euthanize \_\_\_\_\_

**Teeth:** Normal  Missing  Broken  Worn  Describe: \_\_\_\_\_ Photo? side view (2) / front view \_\_\_\_\_  
**Coat Condition:** Prime  Summer  Shedding  Mange  Bare/Worn  Describe: \_\_\_\_\_  
**Capture Foot?** Left Front  Right Front  Left Rear  Right Rear   
**Capture Foot Injuries:** Yes  or No  Describe: see assessment

| BODY MEASUREMENTS                                                                                                                                                                                                                 |               | LYNX IDENTIFICATION  |                  |                            |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|------------------|----------------------------|-----------------|
| Weight (Actual or Estimate)                                                                                                                                                                                                       | <u>20</u> lbs | Lynx                 |                  | Bobcat                     |                 |
| Total Length                                                                                                                                                                                                                      | mm            | Tail Banding Pattern | No Bands         | 1 Band                     | 2 Bands 3 Bands |
| Chest Girth                                                                                                                                                                                                                       | mm            | Color of tip of tail | Completely Black | Black on top/white beneath |                 |
| DNA Sample: Yes No                                                                                                                                                                                                                |               | Hind Foot Coloration | Grey             | Dark Brown                 |                 |
| Hair Blood Tissue                                                                                                                                                                                                                 | Mouth Swab    | Ear Tuft Length      | >1 inch          | <1 inch                    |                 |
| Parasites: Yes No                                                                                                                                                                                                                 |               | Toe Coloration       | Left Front       | Right Front                | Left Rear       |
| Sparse Abundant                                                                                                                                                                                                                   | Sample Y N    | (circle white toes)  | (I M M O)        | (I M M O)                  | (I M M O)       |
| Right Rear                                                                                                                                                                                                                        |               |                      |                  |                            | (I M M O)       |
| Radio Collared: Y <input type="checkbox"/> N <input type="checkbox"/> Initial/Previously Collared _____ Collar Works: Y <input type="checkbox"/> N <input type="checkbox"/> Make: <u>LT Sirtrack</u> <u>ATS</u> GPS SAT VHF _____ |               |                      |                  |                            |                 |
| Frequency: _____ Replacement Collar Freq: _____ Collar Life: _____ months Leather Circum: _____ mm                                                                                                                                |               |                      |                  |                            |                 |

Comments: Wound on anterior & fluids  
Dr [redacted] wanted to try the sedative combination to see if recovery smoother  
 Treatment: Wound care & debridement, long term antibiotic, subg of fluids 350ml  
 Photos? YES  NO  Photo Number \_\_\_\_\_ Reviewed Data Sheet? YES  NO   
 Subcutaneous fluids - 150 - 200 ml  
Plan - recover from sedation & release in afternoon

# Call For Service

CFS Number: **WS13-M14392**

Date: **10/24/2013**

## Call For Service

---

|                  |                              |                  |                                   |
|------------------|------------------------------|------------------|-----------------------------------|
| CFS Number       | <b>WS13-M14392</b>           | Complainant      | [REDACTED]                        |
| Date             | <b>10/24/2013</b>            | Address          | <b>Tomah Dam Rd</b>               |
| Dispatcher       |                              | City, State, Zip | <b>Codyville</b>                  |
| Call Source      | <b>0 - Phone</b>             | Phone            | [REDACTED]                        |
| Received         | <b>10:17:00 AM</b>           | Call type        |                                   |
| Dispatched       | <b>10:17:00 AM</b>           | Reported Offense | <b>6892 - Trapping - Other</b>    |
| Arrived          | <b>10:40:00 AM</b>           | Verified Offense | <b>6892 - Trapping - Other</b>    |
| Cleared          |                              | Tow Company      |                                   |
| Location         | <b>Tomah Dam Rd</b>          | Vehicle          |                                   |
| City, State, Zip | <b>Codyville</b>             | Vehicle License  |                                   |
| Jurisdiction     | <b>W13 - Section 13</b>      | Disposition      | <b>2 - Inactive</b>               |
| Grid             | <b>15608 - Codyville Plt</b> | Priority         |                                   |
| Sector           |                              | Classification   |                                   |
| Map              |                              | Agency           | <b>MWS - Maine Warden Service</b> |
| X Coordinate     |                              | Case             |                                   |
| Y Coordinate     |                              | Reviewed On      | <b>11/1/2013 3:48:58 PM</b>       |
| Reviewed By      | <b>10321 - Scott, Dan</b>    |                  |                                   |

### Officers

10851 - Richard, Brad

### **CFS Subject Profiles:**

---

|            |                     |
|------------|---------------------|
| Full Name  | Address             |
| CSZ        | Home Phone          |
| Work Phone | Email Address       |
| Sex        | Race                |
| Ethnicity  | DOB                 |
| Age        | Hair Color          |
| Eye Color  | Height              |
| Weight     | DLN                 |
| State      | Driver License Exp. |
| SSN        |                     |

Notes Richard 2187 2ot hours 4 reg hours C-1 called and said that he caught a lynx by the hind foot on the Tomah Dam Road. I told him to stand by and I would be there as soon as I could get there. I arrived and took a few pictures and had him stand by there at that location as he caught another lynx about 5 miles away. I assisted Biologist getting that cat to the vet in [REDACTED]. No trapping violations detected. CLOSE

# Lynx Incidental Capture Report

Report No. 2013-TRP008

Lynx ID: LIC35

Name of Individual Reporting Capture: [REDACTED] trapper, [REDACTED]  
[REDACTED]

Name of Biologist/Warden Responding to Report: District Warden Brad Richards, Biologist Mark Caron, Rich Bard, and Tom Schaeffer

Type of Capture: Trap

*Set type:*

*Trap type and size:* Foothold – #3 - 2 coils, offset jaws

*Jaw spread and swivels:* 6 ½ inches, 2 swivels

*Staking:* staked, 18 inch chain

*Bait:*

*Lure:* urine

*Visibility of Bait:* None

*Legal Set?* Yes

Location of Capture: Waite, Bingo Rd

Wildlife Management District: 19

GPS Coordinates (UTM preferred): 609412, 5020929

GPS Map Datum (NAD 83 preferred): WGS84/NAD 83

Date of Capture: 10/24/13

Disposition of Lynx: Alive, sedated, treated, and released

Age/Sex: Adult female; 21 lbs

## Description of events

**Response:** At 1017, Warden Brad Richards responded to the call from a trapper that he caught two lynx in the towns of Waite/Codyville (also see report 2013\_TRP007). MDIFW biologists Mark Caron and Tom Schaeffer were nearby responding to a previous lynx capture (report 2013\_TRP006). Wdn. Richards and biologists Mark Caron, Rich Bard, and Tom Schaeffer responded. The animal was sedated, examined for injuries and given supportive care (hydrating fluids, antibiotics, monitor vital signs, and injury treated following established procedures) before being released. Wdn. Richards examined the trap and interviewed the trapper for compliance with State trapping laws. The set was legal. Biologist Jen Vashon notified USFWS Special Agent Eric Holmes of the capture.

**Weather conditions:** Overnight: 32 degrees F and windy. Daytime: 43 degrees F and windy.

**Disturbance:** None reported or observed at site

**Assessment of the lynx:** The animal was sedated and examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, torso and extremities were normal. No injuries observed on lynx or capture foot. Since body temperature was slightly below normal, lynx was kept warm following established procedures. No broken, chipped, or missing teeth were observed. The animal was a female and weighed 21 lbs. The lynx was given antibiotics and subcutaneous fluids, and was measured, weighed, ear tagged, and DNA was collected. The lynx was given an injection of yohimbine to reverse the effects of the sedative and observed during recovery in a portable dog crate. Upon recovery, although she still had some effects of the sedation, she walked away putting full-weight on all four legs.

See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information.  
Report prepared by: Jennifer Vashon 11/4/13;

ATE: 10/24/2013  
 Observers: Caron, Bard  
 Recorder: Bard  
 Road Name: Bingo Rd.  
 UTMe 609412 UTMn 5020929 Datum: WGS84 NAD27 NAD83

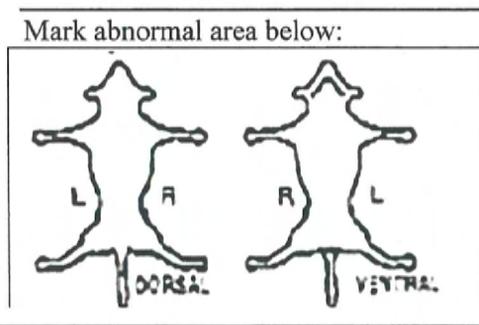
**Incidental Lynx Capture Form**

Lynx ID# LX35  
 Time when manageable: 3:42  
 Time of recovery/release: 6:30

|                      | Ketaset Concentration<br>200 mg/ml | Xylazine Concentration<br>400 mg/ml | Time  | Delivery Method | Additional Drug (If Needed)       | Amount                          |  |
|----------------------|------------------------------------|-------------------------------------|-------|-----------------|-----------------------------------|---------------------------------|--|
| 1 <sup>st</sup> Dose | 0.7 ml                             | 0.07 ml                             | 15:00 | Tab stick       | Antibiotic (SCorIM) 0.5cc/10lbs   | 1.0 cc                          |  |
| 2 <sup>nd</sup> Dose | 0.7 ml                             | 0.07 ml                             | -     | discarded       | Yohimbine (IV or IM) 0.5cc/20lbs  | 0.5 4:27                        |  |
| 3 <sup>rd</sup> Dose | 0.7 ml                             | 0.07 ml                             | 15:28 | Tab stick       | Midazolam (IV or IM) 0.5cc/slowly |                                 |  |
| 4 <sup>th</sup> Dose | ml                                 | ml                                  |       |                 | Epinephrine (SCorIM) 0.5cc/10lb   |                                 |  |
| Comments:            |                                    |                                     |       |                 |                                   | Doxapram (IV or SL) 1.0cc/22lbs |  |

Sex: M F Estimated Age: Kitten Subadult Adult Year Born (if known) \_\_\_\_\_  
 Ear Tag# (Left) 241 (Right) 241 Tag Color: yellow

**Subjective (Body Condition):**  
 Poor  Fair  Good  Excellent   
**Objective** Normal Abnormal  
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities    
 Assesment: Good cond. Pan



| Body Temperature   | Time |
|--------------------|------|
| Normal - 101-102.5 |      |
| 100.2 F            | 3:47 |
| 100.1 F            | 3:57 |
| 100.7 F            | 4:07 |
| 99.1 F             | 4:17 |
| 99.4               | 4:23 |

Plan: Release/no sedation  Sedation: Treat in field  Sedate/Transport to Vet  Euthanize   
 Teeth: Normal Missing  Broken  Worn  Describe: \_\_\_\_\_ Photo? side view (2) / front view   
 Coat Condition: Prime Summer  Shedding  Mange  Bare/Worn  Describe: \_\_\_\_\_  
 Capture Foot? Left Front  Right Front  Left Rear  Right Rear   
 Capture Foot Injuries: Yes or No  Describe: \_\_\_\_\_

**Teeth:** Normal Missing  Broken  Worn  Describe: \_\_\_\_\_ Photo? side view (2) / front view   
**Coat Condition:** Prime Summer  Shedding  Mange  Bare/Worn  Describe: \_\_\_\_\_  
**Capture Foot?** Left Front  Right Front  Left Rear  Right Rear   
**Capture Foot Injuries:** Yes or No  Describe: \_\_\_\_\_

| BODY MEASUREMENTS            |           | LYNX IDENTIFICATION                            |                         |                            |                                          |
|------------------------------|-----------|------------------------------------------------|-------------------------|----------------------------|------------------------------------------|
| Weight (Actual or Estimate)  | 21.10 lbs | Lynx                                           |                         | Bobcat                     |                                          |
| Total Length                 | 1020 mm   | Tail Banding Pattern                           | <u>No Bands</u>         | 1 Band                     | 2 Bands 3 Bands                          |
| Chest Girth                  | 370 mm    | Color of tip of tail                           | <u>Completely Black</u> | Black on top/white beneath |                                          |
| DNA Sample: Yes No           |           | Hind Foot Coloration                           | <u>Grey</u>             | Dark Brown                 |                                          |
| Hair Blood Tissue Mouth Swab |           | Ear Tuft Length                                | <u>&gt;1 inch 47mm</u>  | <1 inch                    |                                          |
| Parasites: Yes <u>No</u>     |           | Toe Coloration (circle white toes) <u>none</u> | Left Front (I M M O)    | Right Front (I M M O)      | Left Rear (I M M O) Right Rear (I M M O) |

Radio Collared: Y N Initial/Previously Collared \_\_\_\_\_ Collar Works: Y N Make: LT Sirtrack ATS GPS SAT VHF  
 Frequency: \_\_\_\_\_ Replacement Collar Freq: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months Leather Circum: \_\_\_\_\_ mm

Comments: - No response to 1<sup>st</sup> dose. Not sure why. - cat moved when jabbed  
 - drug dose used for 30 lb cat, too heavy, took a long time to come out of drug  
 - some effect of drug, dark, mobile, no limping - dog crate  
 Photos? YES NO Photo Number \_\_\_\_\_ Reviewed Data Sheet? YES NO

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER *\*advise caller to minimize disturbance to the animal\**

Date 10/24/2013 Time 11:07 AM IFW Staff collecting caller info: Brad Richard  
 Trapper/Individual Reporting [REDACTED]  
 Address [REDACTED] Phone number: [REDACTED]  
 Town: Waite **LYNX ID (w/o disturbing cat)**  
 Location off end of Bingo Rd Pits  
 GPS coordinates 067 36.22 E 45 20.00 N  
 GPS datum WGS84 NAD27 NAD83  
 Directions and meeting time:  
 Blacktip tail **Yes** No  
 Spotted **Yes** No  
 Eartufts **Yes** No  
 Large feet **Yes** No  
 Grey legs **Yes** No

*Circle all info that applies*  
 Type of trap? **Foot-hold** Conibear Cage  
 Animal still in trap? **Yes** No  
 When was trap last tended? **Yesterday**  
 Lynx appear injured? **Yes** Dead  
 Staking of Trap? **Staked** Drag  
 Lynx appear injured? **Yes** **No**  
 Is animal entangled? Yes **No**  
 Animal's Behavior **Calm** Sleeping Pacing  
 Disturbance at the site? Yes **No** Other: \_\_\_\_\_  
 Type of Disturbance: Vehicle traffic Hunters Equipment operation Animal disturbance  
 Current weather? Clear Rain Snow **Windy** Current temperature? \_\_\_\_\_ 43  
 Overnight weather? Clear Rain Snow **Windy** Overnight temperature? \_\_\_\_\_ 32

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL *prior* to chemical immobilization

Animal entangled in vegetation? Yes **No**  
 Unresponsive? Yes **No**  
 Broken bones? Yes **No** If yes, Compound non-compound  
 Bleeding? Yes **No** If yes, minor Major  
 Laceration? Yes **No** If yes, superficial (through 1st layer of skin) major (deep requires sutures)  
 Limping/dragging limb? Yes **No**

## 5. Information when ON-SITE: *Circle all information that applies*

Conibear 110 120 160 220 Other: \_\_\_\_\_  
 Foothold trap type #1.75 #2 **#3** MB 450 MB 550 Other: \_\_\_\_\_  
 Inside jaw spread **6 1/2"** inches Number of Swivels? **2**  
 Jaw type Padded Laminated **Offset** Number of coils: **2**  
 Securing method **Staked** Drag Chain length: **18**  
 In-line spring? Yes **No**  
 Bait? Yes **No** Type: \_\_\_\_\_ Visible? **Yes** No  
 Lure? **Yes** No Type: **urine** Legal Set? **Yes** No

All people present 1 Brad Richard 2 Rich Bard 3 Tom Schaeffer  
 4 Mark Caron 5 Roger Milligan 6 \_\_\_\_\_ 7 \_\_\_\_\_

## 6. Anesthesia (follow protocol and complete capture form)

### 7. Action Taken:

Release uninjured? Y/N Euthanized? Y/N Taken to veterinarian? Y/N

Name&Location of Veterinarian: Phone #:

Comments:

# Call For Service

CFS Number: **WS13-M14395**

Date: **10/24/2013**

## Call For Service

---

|                  |                           |                  |                                   |
|------------------|---------------------------|------------------|-----------------------------------|
| CFS Number       | <b>WS13-M14395</b>        | Complainant      | <b>[REDACTED]</b>                 |
| Date             | <b>10/24/2013</b>         | Address          | <b>Bingo Rd</b>                   |
| Dispatcher       |                           | City, State, Zip | <b>Waite</b>                      |
| Call Source      | <b>0 - Phone</b>          | Phone            |                                   |
| Received         | <b>11:17:00 AM</b>        | Call type        |                                   |
| Dispatched       | <b>11:17:00 AM</b>        | Reported Offense | <b>6892 - Trapping - Other</b>    |
| Arrived          | <b>11:40:00 AM</b>        | Verified Offense | <b>6892 - Trapping - Other</b>    |
| Cleared          | <b>4:00:00 PM</b>         | Tow Company      |                                   |
| Location         | <b>Bingo Rd</b>           | Vehicle          |                                   |
| City, State, Zip | <b>Waite</b>              | Vehicle License  |                                   |
| Jurisdiction     | <b>W08 - Section 08</b>   | Disposition      | <b>2 - Inactive</b>               |
| Grid             | <b>15491 - Waite</b>      | Priority         |                                   |
| Sector           |                           | Classification   |                                   |
| Map              |                           | Agency           | <b>MWS - Maine Warden Service</b> |
| X Coordinate     |                           | Case             |                                   |
| Y Coordinate     |                           | Reviewed On      | <b>11/1/2013 3:48:59 PM</b>       |
| Reviewed By      | <b>10321 - Scott, Dan</b> |                  |                                   |

### Officers

10851 - Richard, Brad

Notes Richard 4 Reg Hours 30 miles C-1 called and stated that he had caught a second lynx on the end of the Bingo Rd past Dwelley's pits. I responded and assisted the biologists dealing with the Lynx and getting some necessary equipment. No trapping violations detected.

## Lynx Incidental Capture Report

Report No. 2013-TRP009

Lynx ID: LIC36

Name of Individual Reporting Capture: [REDACTED] trapper, [REDACTED]  
[REDACTED]

Name of Biologist/Warden Responding to Report: District Warden Will Shuman, Sgt. Bill Chandler, Biologist Scott McLellan

Type of Capture: Trap

*Set type:*

*Trap type and size:* Foothold – MB550 - 2 coils, offset jaws

*Jaw spread and swivels:* 4 5/8 inches, 2 swivels

*Staking:* staked, 18 inch chain

*Bait:* commercial coyote bait

*Lure:* commercial coyote lure

*Visibility of Bait:* No

*Legal Set?* Yes

Location of Capture: T 4 R15 Wels

Wildlife Management District: 4

GPS Coordinates (UTM preferred): 449956 5095877

GPS Map Datum (NAD 83 preferred): NAD 83

Date of Capture: 10/25/13

Disposition of Lynx: Alive, sedated, treated, and released

Age/Sex: Adult male; 20 lbs

### **Description of events**

**Response:** At 1045, Warden Shuman responded to the call from a trapper that he caught a lynx. Wdn. Shuman and Sgt. Chandler and biologist Scott McLellan responded. The animal was sedated, examined for injuries and given supportive care (hydrating fluids, antibiotics, monitor vital signs, and injury treated following established procedures) before being released. Wdn. Shuman and Sgt. Chandler examined the trap and interviewed the trapper for compliance with State trapping laws. The set was legal. Biologist Jen Vashon notified USFWS Special Agent Eric Holmes of the capture.

**Weather conditions:** Overnight: 30 degrees F and windy. Daytime: 39 degrees F and windy.

**Disturbance:** Yes, vehicle traffic

**Assessment of the lynx:** The animal was sedated and examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, and torso were normal. A small laceration was observed on the right front capture foot. Body temperature was normal, lynx was kept warm following established procedures. No broken, chipped, or missing teeth were observed. The animal was a male and weighed 20 lbs. The lynx was given antibiotics, subcutaneous fluids, and the laceration was cleaned (i.e., irrigated following established procedures). The lynx was measured, weighed, ear tagged, and DNA was collected. An injection of yohimbine was given to reverse the effects of the sedative and the lynx was observed during recovery in a portable dog crate. Upon recovery the lynx walked away putting full-weight on all four legs.

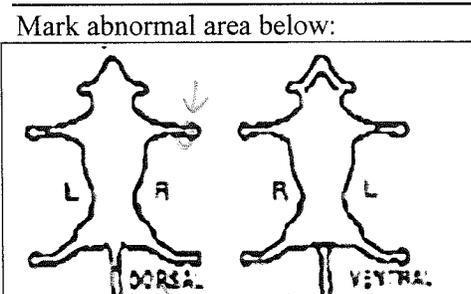
See attached forms: reporting incidental lynx, capture sheet, and WS Incident Card for more information.  
Report prepared by: Jennifer Vashon 11/6/13;

DATE: 10/25/13 SRM, [redacted] **Incidental Lynx Capture Form** **Lynx ID# LIC36**  
 Observers: WON CHANDLER, WON. SULTMAN  
 Recorder: MCELWAN Town: TH RIS WELS  
 Road Name: MCGOSSLEY POND RD. County: SOMERSET CO.  
 UTMe 449956 UTMn 5095877 Datum: WGS84 NAD27 NAD83  
 Time when manageable: 1349h  
 Time of recovery/ release: 1540h

|                      | Ketaset Concentration<br>100 mg/ml | Xylazine Concentration<br>100 mg/ml | Time  | Delivery Method | Additional Drug (If Needed)     | Amount                        |  |
|----------------------|------------------------------------|-------------------------------------|-------|-----------------|---------------------------------|-------------------------------|--|
| 1 <sup>st</sup> Dose | 1.0 ml                             | 0.20 ml                             | 1339h | SYRINGE P/W     | Antibiotic (SCorIM) 0.5cc/10lbs | 1.0                           |  |
| 2 <sup>nd</sup> Dose | ml                                 | ml                                  |       |                 | Yohimbine (IVorIM) 0.5cc/20lbs  | 0.5                           |  |
| 3 <sup>rd</sup> Dose | ml                                 | ml                                  |       |                 | Midazolam (IVorIM) 0.5cc/slowly |                               |  |
| 4 <sup>th</sup> Dose | ml                                 | ml                                  |       |                 | Epinephrine (SCorIM) 0.5cc/10lb |                               |  |
| Comments:            |                                    |                                     |       |                 |                                 | Doxapram (IVorSL) 1.0cc/22lbs |  |

Sex: M F **Estimated Age:** Kitten Subadult **Adult** Year Born (if known) PROBABLY 2011, BUT POSSIBLY A SUBADULT  
 Ear Tag# (Left) 214 (Right) 214 Tag Color: YELLOW

**Subjective (Body Condition):**  
 Poor  Fair  Good  Excellent   
**Objective** Normal Abnormal  
 Eyes/Ears    
 Nose/Mouth    
 Neck/Torso    
 Skin    
 Extremities



| Body Temperature   | Time  |
|--------------------|-------|
| Normal - 101-102.5 |       |
| 102.3 F            | 1355h |
| 101.2 F            | 1405h |
| 101.2 F            | 1430h |
| F                  |       |

**Assesment:** SMALL (SIZE OF P.N HEAD) LACERATION ON DORSAL SIDE OF PAW - PHALANGES - DROP OF BLOOD EXITED SITE IS ONLY WAY IT WAS DETECTED  
**Plan:** Release/no sedation **Sedation:** Treat in field IRRIGATE, ANTIBIOTICS + FLUID Sedate/Transport to Vet Euthanize

**Teeth:** Normal Missing Broken Worn Describe: APPEAR FULL-SIZE, LIKE ADULT TEETH Photo? side view (2) / front view  
**Coat Condition:** Prime Summer Shedding Mange Bare/Worn Describe: BETWEEN SUMMER + PRIME  
**Capture Foot?** Left Front Right Front Left Rear Right Rear  
**Capture Foot Injuries:** Yes or No Describe: See assessment

| BODY MEASUREMENTS                                                                                   |            | LYNX IDENTIFICATION  |                  |                            |                 |
|-----------------------------------------------------------------------------------------------------|------------|----------------------|------------------|----------------------------|-----------------|
| Weight (Actual or Estimate)                                                                         | 20 lbs     | Lynx                 |                  | Bobcat                     |                 |
| Total Length                                                                                        | 660 mm     | Tail Banding Pattern | No Bands         | 1 Band                     | 2 Bands 3 Bands |
| Chest Girth                                                                                         | EX 410 mm  | Color of tip of tail | Completely Black | Black on top/white beneath |                 |
| DNA Sample: Yes No                                                                                  | IN 420     | Hind Foot Coloration | Grey             | Dark Brown                 |                 |
| Hair Blood Tissue                                                                                   | Mouth Swab | Ear Tuft Length      | >1 inch          | <1 inch                    |                 |
| Parasites: Yes No                                                                                   | UNK        | Toe Coloration       | Left Front       | Right Front                | Left Rear       |
| Sparse Abundant                                                                                     | Sample Y N | (circle white toes)  | (IMMO)           | (IMMO)                     | (IMMO)          |
| Right Rear                                                                                          | Right Rear |                      |                  |                            |                 |
| Radio Collared: Y N Initial/Previously Collared Collar Works: Y N Make: LT Sirtrack ATS GPS SAT VHF |            |                      |                  |                            |                 |
| Frequency: Replacement Collar Freq: Collar Life: months Leather Circum: mm                          |            |                      |                  |                            |                 |

**Comments:** RECOVERED IN KENNEL + LET OUT @ 1540h - LOOKED AWESOME (GOOD COORDINATION, GOOD USE OF ALL LIMBS, ETC)  
 Photos? YES NO Photo Number \_\_\_\_\_ Reviewed Data Sheet? YES NO

# Staff Check List for Reporting and Responding to an Incidental Capture of a Lynx

## 1. Obtain information from CALLER \*advise caller to minimize disturbance to the animal\*

Date 10-25-13 Time 1030 IFW Staff collecting caller info: Will Shuman  
 Trapper/Individual Reporting \_\_\_\_\_  
 Address \_\_\_\_\_ Phone number \_\_\_\_\_  
 Town: TYRIS WELS LYNX ID (w/o disturbing cat) \_\_\_\_\_  
 Location: McGoosie Pond Rd  
 GPS coordinates N 46°00.8760' E W 069°38.7965' N  
 GPS datum WGS84 NAD27 NAD83  
 Directions and meeting time: \_\_\_\_\_

Circle all info that applies

Type of trap?  Foot-hold  Conibear  Cage  Animal still in trap?  Yes  No  
 When was trap last tended? 10-24-13 approx 9:30am  Alive  Dead  
 Staking of Trap?  Staked  Drag  Lynx appear injured?  Yes  No  
 Is animal entangled?  Yes  No  Animal's Behavior  Calm  Sleeping  Pacing  
 Disturbance at the site?  Yes  No Other: \_\_\_\_\_  
 Type of Disturbance:  Vehicle traffic  Hunters  Equipment operation  Animal disturbance  
 Current weather?  Clear  Rain  Snow  Windy  Current temperature? 39° F  
 Overnight weather?  Clear  Rain  Snow  Windy  Overnight temperature? 30's °F

## 2. Contact IFW lynx hotline 592-4734 to coordinate response

## 3. At the site minimize disturbance (crowd and/or traffic control)

## 4. At the site: Assess the ANIMAL prior to chemical immobilization

Animal entangled in vegetation?  Yes  No  
 Unresponsive?  Yes  No  
 Broken bones?  Yes  No If yes,  Compound  non-compound  
 Bleeding?  Yes  No If yes,  minor  Major  
 Laceration?  Yes  No If yes,  superficial (through 1st layer of skin)  major (deep requires sutures)  
 Limping/dragging limb?  Yes  No

## 5. Information when ON-SITE: Circle all information that applies

Conibear 110 120 160 220 Other: \_\_\_\_\_  
 Foothold trap type #1.75 #2 #3 MB 450  MB 550 Other: \_\_\_\_\_  
 Inside jaw spread 4 5/8 inches Number of Swivels? 2  
 Jaw type Padded Laminated  Offset Number of coils: 2  
 Securing method  Staked  Drag Chain length: 18' In-line spring? Yes  No  
 Bait?  Yes  No Type: Commercial coyote bait/lure Visible?  Yes  No JHV\*  
 Lure?  Yes  No Type: \_\_\_\_\_ Legal Set?  Yes  No

All people present 1 Scott McLellan 2 \_\_\_\_\_ 3 \_\_\_\_\_  
 4 WYN Bill Chandler 5 WYN Will Shuman 6 \_\_\_\_\_ 7 \_\_\_\_\_

## 6. Anesthesia (follow protocol and complete capture form)

## 7. Action Taken:

Release uninjured?  Y/N Euthanized?  Y/N Taken to veterinarian?  Y/N

Name & Location of Veterinarian: \_\_\_\_\_ Phone #: \_\_\_\_\_

Comments:

\* no visible bait; error on datasheet per conversation w/ Sgt. Chandler on 10/13 who had also responded to capture. (JHV 10/13)

# Call For Service

CFS Number: **WS13-M14350**

Date: **10/25/2013**

## Call For Service

|                  |                            |                  |                                             |
|------------------|----------------------------|------------------|---------------------------------------------|
| CFS Number       | <b>WS13-M14350</b>         | Complainant      | [REDACTED]                                  |
| Date             | <b>10/25/2013</b>          | Address          | <b>Mcgoosele Pond Rd</b>                    |
| Dispatcher       |                            | City, State, Zip | <b>T4 R14Wels</b>                           |
| Call Source      | <b>0 - Phone</b>           | Phone            | [REDACTED]                                  |
| Received         | <b>10:45:00 AM</b>         | Call type        |                                             |
| Dispatched       |                            | Reported Offense | <b>6780 - Endangered/Threatened Species</b> |
| Arrived          |                            | Verified Offense | <b>6780 - Endangered/Threatened Species</b> |
| Cleared          |                            | Tow Company      |                                             |
| Location         | <b>Mcgoosele Pond Rd</b>   | Vehicle          |                                             |
| City, State, Zip | <b>T4 R14Wels</b>          | Vehicle License  |                                             |
| Jurisdiction     | <b>W12 - Section 12</b>    | Disposition      | <b>1 - Active</b>                           |
| Grid             | <b>11990 - T4 R14 WELS</b> | Priority         |                                             |
| Sector           |                            | Classification   |                                             |
| Map              |                            | Agency           | <b>MWS - Maine Warden Service</b>           |
| X Coordinate     |                            | Case             | <b>WS13-M14350</b>                          |
| Y Coordinate     |                            | Reviewed On      |                                             |
| Reviewed By      |                            |                  |                                             |

### Officers

11196 - Chandler, Bill

12159 - Shuman, Will

### CFS Subject Profiles: Cote, Gerald R.

|            |            |                     |            |
|------------|------------|---------------------|------------|
| Full Name  | [REDACTED] | Address             | [REDACTED] |
| CSZ        | [REDACTED] | Home Phone          | [REDACTED] |
| Work Phone | [REDACTED] | Email Address       | [REDACTED] |
| Sex        | [REDACTED] | Race                | [REDACTED] |
| Ethnicity  | [REDACTED] | DOB                 | [REDACTED] |
| Age        | [REDACTED] | Hair Color          | [REDACTED] |
| Eye Color  | [REDACTED] | Height              | [REDACTED] |
| Weight     | [REDACTED] | DLN                 | [REDACTED] |
| State      | [REDACTED] | Driver License Exp. | [REDACTED] |
| SSN        | [REDACTED] |                     |            |

Notes lynx in trap on McGoosele Road

2235 Will Shuman- 150 miles travel, 6 hours time. Sgt. Chandler and I responded to a lynx capture off the Ragmuff Road in T4 R15 WELS. Scott Mclellan was the attending wildlife biologist. The Lynx was released uninjured. 20 lb male. No trapping violations.



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Washington, D.C. 20240



In Reply Refer To:  
FWS/AES/DCC/BEL/060841

**JUL 24 2015**

Kathleen E. Trever  
Deputy Attorney General  
Idaho Department of Fish and Game  
P.O. Box 25  
Boise, Idaho 83707

Subject: Touhy Request

Dear Ms. Trever:

On May 26, 2015, we received your request for Bridget Fahey to assist as an expert witness in a matter in Federal District court for the District of Idaho. At issue is a biological opinion (Opinion) prepared by the U. S. Fish and Wildlife Service (Service) for the Service's Division of Management Authority's oversight of international trade of bobcat pelts that are exported pursuant to the Convention on International Trade in Endangered Species (CITES). Of specific interest is the scope of the Opinion's incidental take statement.

Ms. Fahey has been the Service's lead on the consultation since 2007 and is currently the Service employee with the greatest knowledge of the biological opinion and its incidental take statement. Therefore, we are approving your request for Bridget Fahey to assist as an expert witness and provide an affidavit. Based upon our review of, and ongoing monitoring activities covered by the biological opinion and its incidental take statement, we support your view that the incidental take statement exempts take of Canada lynx that are incidentally taken under Idaho's bobcat trapping program.

Your letter also requested that Ms. Fahey confirm that the Lynx Conservation and Assessment Strategy circulated in August 2013 was a draft document. To clarify, the August 2013 version of the strategy is not considered a draft; rather, it is an updated version of the document (Version 3) and is considered the latest version until such time as it is revised. Finally, you requested that Ms. Fahey confirm the Service's position regarding the trapping of a lynx on the Salmon-Challis National Forest as set for in a

letter dated March 12, 2012, to John Marvel. Ms. Fahey was not involved with that letter and as such is not in a position to testify on its contents.

If you have further questions, please contact Ms. Fahey at (703)358-2163.

Sincerely,

A handwritten signature in black ink, appearing to read 'H. Speights', with a long horizontal flourish extending to the right.

Helen Speights  
Chief, Branch of Ecological Services  
Litigation Support



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE Mountain-Prairie Region

IN REPLY REFER TO:  
FWS/R6  
ES/Permits

MAILING ADDRESS:  
P.O. Box 25486, DFC  
Denver, Colorado 80225-0486

STREET LOCATION:  
134 Union Boulevard  
Lakewood, Colorado 80228-1807

Mr. Rick Cables  
Colorado Division of Parks and Wildlife  
1313 Sherman Street, Room 618  
Denver, Colorado 80203

MAR 15 2012



Dear Mr. Cables:

We received your permit renewal request on November 28, 2011, for permit TE-052450. Upon further research, we discovered you do not need to renew this permit, or have any other permit to continue your Canada lynx research.

Under Section 6 of the Endangered Species Act (Act), States that are party to a Section 6 Cooperative Agreement have wide latitude to work with listed species without an endangered species recovery permit. Employees of the State (or people designated by the State) may take endangered and threatened animals when acting in the course of official duties, **unless, for endangered species only**, the taking is reasonably anticipated to result in:

1. The death or permanent disabling;
2. Removal of the specimen from the State where the taking occurred;
3. Introduction of the specimen into areas beyond its historical range; or
4. Holding the specimen in captivity for a period of more than 45 consecutive days.

You may continue surveying, marking, drawing blood, and tracking Canada lynx under your State of Colorado Section 6 Cooperative Agreement, without an endangered species recovery permit from us.

We appreciate your leadership in recovering Canada lynx in the State of Colorado. If you have further questions, please contact Kris Olsen, Regional Recovery Permit Coordinator, at 303-236-4256.

Sincerely,

Michael G. Thabault  
Assistant Regional Director  
Ecological Services



## STATE OF IDAHO

OFFICE OF THE ATTORNEY GENERAL

LAWRENCE G. WASDEN

May 26, 2015

Bridget Fahey  
Chief of Endangered Species  
U.S. Fish and Wildlife Service  
Mountain Prairie Region 6  
P.O. Box 25486, DFC  
Denver, CO 80225-0486

Re: *Touhy* Request

Dear Ms. Fahey:

I represent Idaho state agency officials in an Endangered Species Act citizen suit brought against them in U.S. District Court (District of Idaho) related to their “authorization” of trapping in alleged lynx habitat in Idaho and risk of incidental take of lynx. I write to request your participation as a witness in this matter pursuant to the federal regulations for such a request where the United States is not a party to the lawsuit. *See* 43 CFR part 2, Subpart H.

Plaintiffs Center for Biological Diversity, Western Watersheds Project, Friends of the Clearwater, and Wildearth Guardians, filed suit against the Governor of Idaho, the seven individual members of the Idaho Fish and Game Commission, and the Director of the Idaho Department of Fish and Game. The parties were unable to resolve the matter at a recent settlement conference, and dispositive motions in the case are scheduled to be filed by July 10, 2015. No evidentiary hearing has yet been scheduled. At this point, the Idaho state officials request your testimony in the form of a declaration in support of a dispositive motion; they may also request your testimony in the event of a hearing.

Specific to this request, Plaintiffs contend that Defendants’ “authorization” of trapping in alleged lynx habitat in Idaho is unlawful because of the risk of incidental take of lynx. In their defense, Defendants contend that Idaho is a state participant in the federal and international Convention on International Trade in Endangered Species (CITES) Export Program for Appendix II Furbearer Species, and that bobcat trapping in Idaho under this program has coverage for a limited amount of incidental take of lynx. Defendants base this contention on a Biological Opinion and Incidental Take Statement (ITS) prepared by USFWS Ecological Services for the USFWS Division of Management Authority. Plaintiffs have not recognized any coverage for state-licensed trapping activities related to potential incidental take of lynx in Idaho.

Letter to Bridget Fahey  
May 22, 2015  
Page 2 of 3

The subject of the testimony Idaho officials request from you relates to the USFWS Biological Opinions and ITS for the incidental take of lynx under the CITES program, specifically discussing the coverage for incidental take of lynx as it applies to state-licensed trapping activities, and for bobcat trapping in Idaho in particular. I reviewed your declaration on behalf of state defendants in similar litigation in Montana in 2014 (*Friends of the Wild Swan et al., v. Vermillion et al.*, 13-CV-66-DLC). I expect the scope and substance of your testimony would be comparable in this case.

In addition, Idaho officials request your testimony to confirm the Lynx Conservation and Assessment Strategy circulated by USFWS and other federal agencies in August 2013 was a draft document. State officials also request your testimony to confirm USFWS' position regarding the trapping of a lynx on the Salmon-Challis National Forest near Salmon Idaho, as set forth in a letter dated March 12, 2012 from Brian Kelly, USFWS Idaho State Supervisor, to John Marvel.

This request complies with 43 CFR 2.88 for the following reasons. USFWS prepared the Biological Opinion and ITS, and enforces the terms of the ITS. Your perspective as Chief of the Service's Endangered Species cannot be replaced by any other testimony. You are the contact person for the most recent reauthorization of the Biological Opinion and ITS, and are familiar with its coverage and requirements. This testimony is not reasonably available from any other source. The Biological Opinions and ITS documents alone may be insufficient to prove the scope of coverage applicable in this case. Therefore, your testimony is necessary to clarify the scope of incidental take coverage for bobcat trapping activities in Idaho.

Though USFWS is not a party to the litigation, the outcome of this case is likely to affect USFWS' mission and programs because of the potential impact to recognition of incidental take coverage provided for bobcat trapping under the CITES program. This in turn is likely to affect the ability of Idaho, as well as other states and tribes, to continue to participate in the CITES program in the future.

Idaho state officials respect the demands on your time and the scope of your official duties. We would minimize the amount of time required for your preparation and testimony and coordinate, to the extent possible, with your schedule. Idaho state officials are willing to submit a check for costs to the Department of the Interior, in accordance with 43 CFR 2.85, if the Service grants this request.

Please feel free to contact me if you have any questions about this request. I have attached a copy of the complaint in this matter for your reference. If there is someone whose testimony would be more appropriate in this matter, please let me know.

Letter to Bridget Fahey  
May 22, 2015  
Page 3 of 3

I am sending a copy of this request to the U.S. Fish and Wildlife Service (USFWS) Mountain Prairie Regional Director, the Department of Interior's Solicitor's Office, and the General Counsel for the Office of Inspector General, as required by 43 CFR Part 2.

Sincerely,

A handwritten signature in blue ink that reads "Kathleen E. Trever". The signature is fluid and cursive, with the first name being the most prominent.

Kathleen E. Trever  
Deputy Attorney General

Encl. (Complaint)

Cc: Noreen Walsh, Regional Director, USFWS, Mountain Prairie Region 6  
Office of the Solicitor, USDO, Portland, OR  
General Counsel for the Inspector General, USDO  
Sam Eaton, Legal Counsel for Idaho Governor's Office of Species Conservation

# Canada Lynx Taken by Trapping in Minnesota Since 2002<sup>1</sup>

## *Incident Summaries*

### November 7, 2002 – Lynx trapped in fox set, St. Louis County

***How was the lynx killed, captured, or injured?*** Caught in a trap by private landowner on his property; landowner reported it to Steve Loch (MN DNR). Steve and the local MN DNR CO (Kip Duncan) went to the site and released the animal.

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)*** Not applicable.

***If caught in a snare or trap, what was the target animal?*** Fox

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** Not applicable.

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available.*** Captured in “fox set” (probably a 1 ¾ “victor coil”, Steve Loch, MN DNR, pers. comm. 2002).

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** Steve Loch did not think that animal was injured.

### December 21, 2002 – Lynx caught in leghold trap, Cook County

***How was the lynx killed, captured, or injured?*** Caught in leghold trap. Animal was released by DNR CO (Conrad Tikkula)

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)*** Not applicable.

***If caught in a snare or trap, what was the target animal?*** Bobcat (S. Loch, pers. comm. 7/17/07).

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** Not applicable.

---

<sup>1</sup> We are aware of no incidental captures of lynx between the listing date and the 11/7/02 incident listed here.

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available.*** Small leg-hold trap. “The set was a baited cubby targeting bobcats; the cubby was formed using conifer branches. The trap used was a 1 1/2 coil spring.” (S. Loch, pers. comm. 7/17/07).

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** The lynx was held down by the trapper with a forked stick and the CO released the trap. It did not appear to cause any injury to the lynx...it bounded away very quickly using all feet.

**January 4, 2003 – Lynx caught in trap and released, Cook County**

Minnesota DNR spoke to trapper on 1/20/2004

***How was the lynx killed, captured, or injured?*** Caught in trap. Trapper reported catching and releasing this animal.

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)*** Not applicable.

***If caught in a snare or trap, what was the target animal?*** Bobcat

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** Not applicable.

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available.*** Cubby set/leghold. “The set was a baited cubby targeting bobcats; the cubby was formed using conifer branches. The trap used was a 1 1/2 coil spring.” (S. Loch, pers. comm. 7/17/07).

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** Appeared to be uninjured...ran away once released.

***Notes:*** “This take occurred 1 mile SE of location of the 12/21/02 incident. Same trapper, same trap-type (1 1/2 coil), same set, but the animal released was a different lynx.” (S. Loch, pers. comm. 7/17/07).

**January, 2003 – Bobcat x lynx hybrid caught in trap and killed (need date)**

John Erb provided this information.

***How was the lynx killed, captured, or injured?*** Lynx killed by a 220 Conibear set for fisher and turned in at Hibbing – apparently to be registered as a bobcat (John Erb). It was a hybrid lynx-bobcat (John Erb inquired if it should be included on this list? He

prefers it be removed since it is not a lynx per se).

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)***

***If caught in a snare or trap, what was the target animal?*** Fisher.

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** Not applicable.

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available.*** It was caught in a 220 conibear set in a “cubby” box, using venison as bait.

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** Not applicable.

**January 5, 2003 – Lynx caught in snare, Koochiching County**

Dave Rorem (CO) provided trapper’s contact information. I left messages, but never received a response.

***How was the lynx killed, captured, or injured?*** Lynx was caught in trap (fox set) and killed. No further information at this time. On 11/5/04, Steve Loch sent an email in which he stated that the “lynx was snared at a fox set baited with deer meat, which was contained in a bait box. Lynx tracks were not observed at the set prior to take. (The lynx did not 'fight' the snare.)”

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)***

***If caught in a snare or trap, what was the target animal?*** Fox.

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** Not applicable.

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available.*** Caught in a snare, presumably set for fox or coyote.

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** Not applicable.

**Winter, 2002-2003 (specific date unknown) – Lynx caught in snare, Clearwater County**

Contacted both the CO and Pat Lund. The CO, Greg Spaulding, is quoted below.

***How was the lynx killed, captured, or injured?*** Trapper reported catching a lynx in a snare in Clearwater County. Trapper's report may not have been entirely accurate. Therefore, the location and further details of this animal's death may be uncertain. DNR CO (Greg Spalding) wrote two tickets related to this incident and reported to Pat Lund (FWS-LE) that the trapper was probably targeting fox.

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)*** "Lynx was caught in a snare. No photos. I seized after the fact. Didn't see the site. Had the snare so took info from that. Cat was caught around the neck. Cat was in the early stages of decomposition and was caught from January to late March when it was found and turned in. Who knows when it was actually killed."

***If caught in a snare or trap, what was the target animal?*** Fox.

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** DNR CO indicated that the snare was set 14" off of the ground, the loop was 10" in diameter, and the cable was 5/16 inch thick.

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available.***

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** Not applicable.

### **December 28, 2003 – Lynx caught in snare, Lake or St. Louis County**

***How was the lynx killed, captured, or injured?*** The lynx was caught approximately 23 miles from Two Harbors between 3:00 p.m. on 12/27 and 7:00 a.m. on 12/28. The lynx was snared. The snare was around the cat's abdomen.

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)*** Not applicable.

***If caught in a snare or trap, what was the target animal?*** The trapper reported having been targeting fox/coyote.

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** The top of snare loop was 22" off the ground (or a little less), approximately 10" loop, approximately 1/8" cable.

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available.*** CO Duncan has distant, poor quality photos. Chris Burdett may have better photos.

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** The lynx, which had previously been radio collared, was tranquilized, released from the snare, examined by "Master Rehaber" Gail Buhl, determined to be releasable and was then released to the wild. Chris Burdett said, "Prior to my arrival at the site, the animal had been drugged by field technicians. The animal was extracted from the snare shortly after I arrived. The snare cable was cinched extremely tight around the waist of L05 and had to be cut off the animal. After removing the animal from the snare it was noticed that his body temperature was quite low and emergency efforts had to be taken to warm the animal before it could be released. We assumed that there was no severe internal bleeding as the tip of the rectal thermometer was not marked with blood after several temperature readings had been taken. After warming and monitoring the animal's condition for about 45 minutes we placed it in a cage trap to recover further. At approximately 13:00 the animal was released from the cage and trotted away without sign of injury."

On May 18, 2007, Chris Burdett wrote: "The cat was snared at Sullivan Lake area, near the intersection of FH-11 and Highway 2. The incident happened on the same road we parked on when visiting L07 den site - the numerical designation of that road may be 407 but I'll have to check to be sure."

#### **January 13, 2004 – Lynx caught in snare, St. Louis County**

***How was the lynx killed, captured, or injured?*** Snared around the rib cage in Normanna Township, about 15 miles north of Duluth, Minnesota.

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)*** Not applicable.

***If caught in a snare or trap, what was the target animal?***

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?***

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available.***

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** This 23 pound male was held overnight at the Lake Superior Zoo and then released the next day. He was fitted with a Telemetry Solutions GPS radiotelemetry collar. DNA indicated that this was the same animal captured and released on November 7, 2002 (S. Loch, pers. comm.. 2004).

#### **October 10, 2004 – Lynx caught in snare, Lake County**

***How was the lynx killed, captured, or injured?*** Caught with snare around neck.

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)*** Snared around neck – animal suffocated when snare cable became tangled in brush.

***If caught in a snare or trap, what was the target animal?*** Fox.

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** According to the trapper, the bottom of the 6” diameter loop was 7-8” from the ground; cable was 5/64” thick

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available.*** Trapper stated that he set trap in a game trail in area with abundant fox and coyote tracks; he said that he typically sets snares near trees or brush so that the animals become tangled and die.

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** Not applicable.

***Other Information:***

26 lb. Male; Caught “slightly north and east of the FR 11/Hwy. 2 intersection (R. Moen, pers. comm. 5/2005)

**October 22, 2004 – Lynx killed in trap, Cook County**

***How was the lynx killed, captured, or injured?*** Caught in a leg-hold trap.

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)*** Found dead in advanced state of decomposition with leg-hold trap on foot.

***If caught in a snare or trap, what was the target animal?*** Red fox

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** n/a

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available and explain whether or not baiting was used. If baiting or scents were used, describe the methods, type of bait, scent, etc. Also describe any furbearer use of the area that was noted before the lynx was trapped.***

(Steve Loch (pers. comm. 5/18/05) described it as a “...scented (no bait) “dirt hole” fox set”.

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** n/a

### ***Other information?***

On 5/18/05, Steve Loch sent the following information in an email:

“On May 15, 2005, a lynx was found dead in an advanced state of decomposition in a gravel pit 10 miles NNW of Lutsen. The gravel pit is located on the Superior National Forest east of Rice Lake and west of Clara Lake; the site is approximately 125 meters west off the Clara Lake Road in T61N, R03W, Section 7, SW/NW (UTM 0667734, 5294514)

“The animal had been caught by the right front foot in a 1 3/4 coil spring jump trap attached to a 2 meter drag. The set was a scented (no bait) "dirt hole" fox set.

Trapper “indicated this trap was missing on Friday, October 22, 2004 and that he could not locate it in spite of repeated attempts over the next couple of weeks. He also indicated that on both Friday and Saturday (Oct. 22 & 23), he had searched very near the specific location where the lynx and trap were eventually found this May. He recalls thinking the trap had likely been stolen as he found no evidence of a 'drag trail' or that an animal had been taken at the set. He mentioned taking a fox in another set near this location subsequent to the incident.

“The lynx and trap were found by a dog. The folks involved then noticed the trap and radio collar. They concluded the animal was a bobcat and indicated that had it not been for the radio collar, they would have likely returned the trap to the trapper and taken no further action.

“This lynx was study animal L09.”

### **November 28, 2004 – Lynx caught in conibear, St. Louis County**

***How was the lynx killed, captured, or injured?*** 220 Conibear bodygrip caught animal by leg (R. Moen, University of Minnesota, pers. comm. 11/30/04; S. Loch, pers. comm.. 11/30/04).

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)*** n/a

***If caught in a snare or trap, what was the target animal?*** Fisher (S. Loch, pers. comm. 12/7/04).

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** n/a

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available.*** See above.

***If the animal was released alive, was it injured? Describe how the animal was assessed***

***for injury and who assessed the animal.*** It is unclear whether animal was assessed for injury. According to Steve Loch (pers. comm. 12/3/04), the trapper and another person told him did not observe any sign of injury based on the way the animal walked away (“totally normal stride, no limp, and so forth”, S. Loch, pers. comm. 12/3/04).

***Other information?*** Two COs, Dan Starr (Tower) and Mike Lekitz (Ely), were at the release site. Steve Loch collected scat from the released lynx’s trail.

### **January 8, 2005 – Lynx caught in snare, St. Louis County**

***How was the lynx killed, captured, or injured?*** Caught in a snare.

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)*** Animal was released alive.

***If caught in a snare or trap, what was the target animal?*** Coyote/red fox

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** “The snare was 5/64ths. The top of the loop was about fourteen inches off the snow.”

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available and explain whether or not baiting was used. If baiting or scents were used, describe the methods, type of bait, scent, etc. Also describe any furbearer use of the area that was noted before the lynx was trapped.***

On 1/15/05, the trapper wrote, “The snare was set in an approach to a bait station used by foxes. Coincidentally, a red fox approached the snared lynx and quickly departed the way he'd came.”

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** See *Other Information* below.

***Other information?***

Lynx was study animal, L25. On 1/10/05, Ron Moen provided the following information:

”L25 was snared by the same person who caught L10 last year. He caught both animals in the same place, almost 1 year apart

“Fortunately the snare was caught around the neck on the collar, which may have lessened problem. It is my understanding he was also using the relaxing snare.

“I received call about 5:45 p.m. Saturday evening, was at the animal at 6:30. We immobilized him, cut snare off, monitored temperature, pulse, respiration. He was up and ready to go at about 10:00, I kept him in pet crate until 11:00. Released him in same location where we released L10 last year.

Keith Olson (MN DNR CO), Chris Burdett, and Ron Moen were present. (R. Moen, pers. comm. 1/10/05).

**November 29, 2005 – Lynx caught in conibear 120, St. Louis County**

***How was the lynx killed, captured, or injured?*** Caught in a conibear 120.

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)*** Animal was released alive, but limping.

***If caught in a snare or trap, what was the target animal?*** marten

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** Not a snare.

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available and explain whether or not baiting was used. If baiting or scents were used, describe the methods, type of bait, scent, etc. Also describe any furbearer use of the area that was noted before the lynx was trapped.*** No photos available. See below for further details. Dan said that he has traditionally trapped for marten in this area.

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** See below.

***Other information?***

Lynx was a kitten, born in 2005 of a radio-collared female (L7 or L13). Adult female was present when trapper found and released kitten. As stated above, lynx was limping after being released. Trapper did not note the ear tag number. L13 had three kittens during the 2005 den visit. According to Ron Moen, L13 was observed with two kittens earlier in November, but it is uncertain whether the third kitten was dead or just not sighted at that time.

I spoke to the trapper, on November 30, 2005. This is a summary of what he told me – the conibear 120 was fitted into a box and baited with skunk lure and deer parts; the entire set was wired to a tree. When he got there he put a sleeping bag over the kitten, which growled, struggled, and hissed. Its mother then came out of the woods and walked toward them. The trapper and his partner then backed off, uncertain of what she would

do. She did not act aggressive, but yawned and walked back to her bed. He said that the kitten had three toes in the trap, appeared not to have struggled much while in the trap, and likely did not suffer any serious injuries, although he speculated that it may lose a few toes. It was raining at the time. He said that the kitten sat still for a few seconds after being let go and then walked back to its mother – they then vocalized to each other before walking away. He then removed his trap from the area.

**December 28, 2005 – Lynx caught in snare, St. Louis, County**

***How was the lynx killed, captured, or injured?*** Caught in a snare.

***If killed, describe the mode of death in as much detail as possible. (A necropsy may be necessary.)*** Strangled – animal was on the ground. (Mark Fredin, Conservation Officer, Minnesota Department of Natural Resources, pers. comm. 1/25/06).

***If caught in a snare or trap, what was the target animal?*** Fox (M. Fredin, pers. comm. 1/25/06)

***If a snare, how high was the top of the snare loop from the ground? How large was the loop? What size (thickness) cable was used?*** According to the trapper (interviewed by Phil Delphey on 1/31/06), the loop was about 12-14” inches off the ground, set under a log to ensure that larger animals (e.g., wolves) would not be caught. Loop was 6” in diameter and constructed of 1/16” cable (‘fox cable).

***If caught in a trap or snare, describe the set in as much detail as possible. Include photos if available and explain whether or not baiting was used. If baiting or scents were used, describe the methods, type of bait, scent, etc. Also describe any furbearer use of the area that was noted before the lynx was trapped.*** See above – trapper set some beaver carcasses about 50 feet from the snare.

***If the animal was released alive, was it injured? Describe how the animal was assessed for injury and who assessed the animal.*** n/a

***Other information?***

The trapper (on 1/31/06) said that he has caught several foxes in that area in recent years, but had never seen any lynx sign and did not suspect lynx in that area.

Tom Rusch, Area Wildlife Manager (Tower Area Wildlife, 650 Hwy 169, Tower MN 55790, 218/753-2580 Ext 240) reported that Mark Fredin, Aurora CO, called in a dead lynx caught in a snare 12/28/05 near Lakeland on the St Louis River (T57 R16). It is a large, tagged male. Tag is "light tan, UNLV MN" thru the ear."

***Location:*** 47° 27.044’ 92° 18.823’

**Reported incidental take of Canada lynx by trappers in Minnesota, 2002-2006**

| Target Animal        | No. of Lynx Captures | No. of Lynx Mortalities |
|----------------------|----------------------|-------------------------|
| Red fox <sup>2</sup> | 8                    | 5                       |
| Unknown              | 1                    | 0                       |
| Bobcat               | 2                    | 0                       |
| Marten               | 1                    | 0                       |
| Fisher               | 1                    | 0                       |
| Total                | 13                   | 5                       |

|               | Trapped | Snared |
|---------------|---------|--------|
| Mortality     | 2       | 3      |
| Non-Mortality | 5       | 3      |

---

<sup>2</sup> In two of these cases, target animal was reported to be 'coyote or red fox.'

**DRAFT – Summary of Montana Lynx Trapping Lawsuit Issues – JZ 8-29-2012**

We had a 10-year intra-service consultation/ITP/BO with the Division of Mgmt. Authority (DMA) on the CITES bobcat trapping/export program that authorized 2 lynx killed and another 2 trapped but not killed per year from 2001-2010 for all states (combined) with bobcat trapping programs and lynx habitat/presence (X:\Numeric Files\1029 LYNX\CITES Biop bobcat trapping.pdf\CITES bobcat trapping BO). Only applies to take resulting from legal bobcat sets. Part of the impetus for the consultation was documented post-listing take of lynx in Montana in bobcat sets:

**Trapping in 2001.** Prior to the bycatch of one lynx in a Montana bobcat trap, the Service had no records of the incidental take of a lynx from approved States and Tribes in the CITES Export Program (Anon., 2000).

The following information on this one reported bycatch of lynx in a bobcat set is excerpted from the February 14, 2001 amendment to the Biological Assessment.

“...an edited summary of the incidental take of this lynx in the Montana trap. The summary is excerpted from the record of a conversation between a Service biologist and the Montana State Furbearer Coordinator (February 8, 2001), and a follow-up email between the same individuals (February 12, 2001). ‘A [young] female, radio-collared’

lynx was taken in a bobcat set on January 23, 2001, in Trapping District 2 (west central Montana). She was found dead near the trap with a swollen foot. It is not clear whether she pulled herself clear or if the trapper released her. It is also unknown what the cause of death was. Researchers have the body for necropsy.' Bobcat trapping quotas [in Montana] are set for each of the seven trapping districts. If the quota is met prior to the scheduled end of the trapping season, the district is closed to further trapping. Trapping districts 1, 2, and 3 are in discussion on trapping in Montana, [Montana] said that they had a strong trapper community. There is a lot of interest, both in trapping and in using hounds. Prices for Montana bobcats is about \$80 to \$120. Other fur prices also remain high enough to make the effort worth it."

The following excerpted email report with additional information on the incidental take was submitted by Division of Management Authority to Endangered Species on March 29, 2001 as required by the February 28, 2001, amended biological opinion.

"The following summarizes the incidental take based on a March 28, 2001, report submitted by the Furbearer Coordinator of the Montana Fish, Wildlife and Parks, and a [cited above] February 8, 2001, email record of a conversation that a Service CITES Policy Specialist/Biologist had with the same Montana State Furbearer Coordinator regarding the incidental take of a lynx in a bobcat set trap. According to these accounts, the incidentally taken lynx was a radio-collared yearling female ....'...considered to be in relatively poor physical condition upon recovery, as assessed by the United States Forest Service lynx project personnel on the date of recovery." He [the coordinator] further reported that, "...According to our [Montana's] investigating game warden, this incidental capture was reported by United States Forest Service personnel on January 1, 2001. This radio-collared lynx was a lynx project animal that had begun transmitting a mortality signal. The lynx was recovered dead on January 1, 2001, with an injury (laceration) on it's back left leg, lying approximately 30 yards away from a bobcat set. The lynx appeared to have been caught in a #4 double-spring foothold trap and had been released earlier by the trapper. During a follow up interview, the trapper indicated he had captured a small radio-collared lynx and had released it apparently uninjured on January 16, 2001. The trapper did not reset his trap while the lynx was in the area.'

The carcass has been retained by the lynx project but a necropsy has not yet been conducted to assess the cause of mortality. Division of Management Authority will periodically follow-up with the Montana State Furbearer Coordinator to check on the results of the necropsy and will provide this information as soon as it is available. The bobcat quota of 180 bobcats was not reached in Trapping District 2 during the 2000-2001 season and remained open until the season closed on February 15, 2001."

DMA requested reinitiation in 2007 because bobcat trapping had increased by 75%, counter to their assumption in the CITES consultation that it would remain relatively stable over the 10 years of the ITP. (X:\Numeric Files\1029 LYNX\CITES Biop bobcat trapping.pdf\CITES bobcat trapping reinitiation). Not clear that we ever did re-consult, but still trying to track that down.

The BO also indicates some of the incidental take in MT known in 2001 was not related to bobcat trapping (marten and wolverine trapping, lion hunting):

Other bycatch of lynx that occurred through trapping in 2001:

Montana –

One lynx killed in a conibear trap legally set for a wolverine; one female caught by the toe in a leghold (size 0 or 00) set for a marten; Fall 2000: a lynx was poached by a lion hunter; a trapper caught a lynx this year and let it go; a collared kitten was poached early in the lion season.

Maine --

Lynx broke its leg in a leghold set for a coyote; Maine Fish and Wildlife received video footage of a lynx released from a leghold set for a coyote.

Such take, if it continued, would not be covered by the CITES ITP.

When I spoke with John Squires and Jay Kolbe regarding MTFWP's recent proposal to get rid of the special marten trapping regulation intended to prevent incidental take of lynx, both referred to several instances of where lynx were captured in small marten leg-hold traps (#0 or #00 according to John). One of those may be the 2001 instance referred to in the BO, but my recollection is that John said others were in 2002-2004. Jay has the records but I did not ask him to provide them to us. He did use those records to convince MTFWP to drop the proposed reg. change and keep the special reg. in place.

I have not found any records in our files indicating that the state ever notified us of any of the trapping-related incidental take other than those events described in the BO. I will talk to Lori again today to see if she is aware of any such notifications.

Bottom line is that some of the incidental take we are aware of was not covered by the BO/ITP. No other mechanism that I'm aware of would have provided such coverage (the 4(d) rule was never completed because DOI solicitors and states could not reach agreement). Not sure if the 4(d) efforts were formally terminated in some way or just left hanging – I'll ask Lori about that today also.

There is also the possibility of substantial unreported lynx captures – either that MTFWP was aware of but about which they did not inform us, and/or take not reported by trappers. Lori suggested she was made aware (by Giddings? – I will check with her on that) of 8 or 9 instances of lynx capture in the first year or two after listing, but then those reports stopped coming in.

Brent called and left a message for Ken McDonald yesterday 8/28 letting him know we should probably talk about the lawsuit and discuss what is likely to happen next.

Please let me know how you'd like me to proceed, and fill in any blanks in the above that you are able to.

Thanks.



DEPARTMENT OF THE INTERIOR  
U.S. FISH AND WILDLIFE SERVICE

### FEDERAL FISH AND WILDLIFE PERMIT

2. AUTHORITY-STATUTES  
16 USC 1533(d)

REGULATIONS  
50 CFR 17.32

50 CFR 13

1. PERMITTEE

US FOREST SERVICE  
ROCKY MOUNTAIN RESEARCH STATION  
800 EAST BECKWITH  
MISSOULA, MT 59807  
U.S.A.

3 NUMBER  
**TE053737-0**

4. RENEWABLE  
 YES  
 NO

5. MAY COPY  
 YES  
 NO

6 EFFECTIVE  
01/01/2012

7 EXPIRES  
09/30/2016

8. NAME AND TITLE OF PRINCIPAL OFFICER *(If #1 is a business)*

JOHN R. SQUIRES  
RESEARCH WILDLIFE BIOLOGIST

9. TYPE OF PERMIT

NATIVE THREATENED SP. RECOVERY - T WILDLIFE

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED

ON LANDS SPECIFIED WITHIN THE ATTACHED SPECIAL TERMS AND CONDITIONS

11. CONDITIONS AND AUTHORIZATIONS:

- A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.
- B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL, TRIBAL, OR OTHER FEDERAL LAW.
- C. VALID FOR USE BY PERMITTEE NAMED ABOVE.
- D. Further conditions of authorization are contained in the attached Special Terms and Conditions.

Permitted species:  
Canada lynx - threatened

ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12. REPORTING REQUIREMENTS

ANNUAL REPORT DUE: 12/31

ISSUED BY

TITLE

ASSISTANT REGIONAL DIRECTOR - ES

DATE

06/05/2012

SPECIAL TERMS AND CONDITIONS FOR  
U.S. Forest Service  
Rocky Mountain Research Station

Species: **Canada lynx** (*Lynx canadensis*)

This permit authorizes the following activities in Colorado and Montana, through September 30, 2016, to enhance recovery, survival, propagation, and scientific research under the following conditions:

**E. The person named in box 8 on the face of this permit is responsible to ensure that the activities of all individuals are in compliance with the terms and conditions of this permit. Only individuals on the attached List of Authorized Individuals are approved to conduct activities pursuant to this permit.**

F. Permittee is authorized to capture Canada lynx under the following conditions:

1. In Colorado, permittee is authorized to capture Canada lynx using methods consistent with Colorado Wildlife Commission Regulations, Chapter 13, Article II, #1315G.
2. In Montana, permittee is authorized to capture Canada lynx using trained tracking dogs on a leash or other control, noose poles, rope snares, injected drugs, baits, box traps, padded leg-hold traps (rubber-jawed Soft-catch traps, no. 3), Belisle foot snares, and other similar capture devices or methods.
3. In Colorado, all unattended capture devices shall be checked and otherwise monitored on a 24-hour basis consistent with Colorado Wildlife Commission regulation Chapter 3, Article I, #302-B. 2.

In Montana, permittee shall monitor all unattended capture devices, except box traps, at least every 24 hours. All box traps will be monitored at least every 48 hours and only box traps may be used at sub-zero temperatures.

4. Lynx kittens shall be at least 21 days of age before being captured.

G. Permittee is authorized to transport and release Canada lynx under the following conditions:

1. Lynx shall be captured and handled only by persons that are trained or otherwise experienced in performing these operations.
2. In Colorado, in the event a lynx is severely injured (e.g., broken leg, large puncture wound, etc.) during trapping or handling, the Colorado Parks and Wildlife (CPW) veterinarian will be contacted immediately. If the CPW veterinarian cannot be reached immediately, the animal will be transported to the

Frisco Creek Wildlife Hospital and Rehabilitation Center. If an animal is severely injured and in severe distress, the animal will be anesthetized and transported to a veterinarian for euthanasia. Alternatively, a CPW law enforcement officer could euthanize a severely injured animal.

In Montana, any injured Canada lynx will be immediately transported to the nearest qualified veterinary hospital for treatment. If the injury is of such nature that euthanasia is recommended, this permit authorizes the Canada lynx to be euthanized at the discretion of the Rocky Mountain Research Station. Copies of all medical reports will be provided to the Project Leader (see attached list).

3. In Colorado, Permittee will provide capture location to CPW, so that animal can be released by CPW in that area.

In Montana, Canada lynx that are recovering from injuries can be temporarily cared for in captivity at a veterinary hospital or enclosed study area. Upon rehabilitation, the Canada lynx shall be released at the capture site.

4. In Colorado, Permittee shall transport all dead Canada lynx to the Colorado State University Veterinary Diagnostic Laboratory. Copies of all necropsy reports shall be provided to the Project Leader and Resident Agent in Charge (see attached list).

In Montana, all dead Canada lynx will be transported to State Veterinarian, for necropsy to determine what cause and conditions of death, and secure any forensic evidence for potential use of Law Enforcement. Copies of all necropsy reports will be provided to the Project Leader, the Resident Agent in Charge, and the Wildlife Lab Supervisor, Montana Department of Fish, Wildlife and Parks (see attached list). In Montana, dispose of unsalvageable carcasses at the animal care unit of the University of Montana. All salvageable carcasses where the pelt or skull is suitable for education purposes must be sent to the Wildlife Lab Supervisor, Montana Department of Fish, Wildlife and Parks (see attached list). These carcasses become the property of the State of use in educational purposes.

- H. Permittee is authorized to collect samples and survey Canada lynx under the following conditions:

1. The permittee may collect blood, tissue, and hair samples for genetic, disease, or contaminant analysis.
2. Captured lynx may be marked (using PIT-tag, tattoo, and other similar methods), measured, weighed, radio-collared, photographed, and otherwise possessed and handled. The permittee may collect blood and hair samples.

3. Radio-collars shall weigh no more than 3% of the individual lynx's body weight.
  4. Diagnostic samples shall be collected as needed and submitted to a qualified laboratory for analysis. Prophylactic or other medical treatments shall be provided under prescription from a veterinarian.
  5. No more than 20 milliliters of blood, 300 grams of hair, and/or fecal material (scats) shall be collected for analysis from live animals. Blood may only be collected by a veterinarian, a person trained by a veterinarian, or an equally qualified person.
- I. No mortality is authorized by this permit. In the event that any mortality occurs, all permitted activities must immediately cease. The Project Leader and the Resident Agent in Charge (see attached list) **must** be contacted within 24 hours. The Project Leader must give approval before permitted activities may begin again. Disposition of carcasses will be at the direction of the Project Leader. Any specimen that is incidentally killed or dies during covered activities shall be preserved according to standard museum practices for that species. Before expiration of the permit, specimens shall be properly labeled and deposited with a designated depository for lynx. Complete collecting data shall be submitted with each specimen.
- J. Permittee shall inform the Project Leader (see attached list) by verbal or email notification of all new localities of any listed species covered by the permit within 7 days of their discovery.

Coverage under this permit is provisional under the following restrictions:

- K. Permittee must understand and agree to abide by 50 CFR Part 13, 50 CFR 17.22 and 17.61 (endangered species) and/or 50 CFR 17.32 and 17.71 (threatened species) as applicable.
- L. All activities shall be coordinated with the Project Leader (see attached list). You are to inform that office of all activities conducted under this permit.
- M. You shall obtain the required permits and conduct your activities in compliance with all applicable laws and regulations of the State(s), Federal, or Tribal agencies upon whose lands you work. This permit does not grant the right of trespass. Such permission must be obtained from private landowners or the land management agency. Permittee and designated members of your staff must carry a copy of this and all other required permits at all times while exercising its authority. Permittees shall carry a copy of this permit while conducting authorized activities.
- N. Permittees shall complete Natural Heritage Database siting forms, as appropriate, and submit to the appropriate entity for that State.

- O. If you wish to continue work with threatened or endangered species after expiration of this permit, your request for permit renewal must be received by the Permit Coordinator (see attached list) on or before August 30, 2016. Meeting this requirement allows you to continue authorized activities until your renewal application is acted upon. If this requirement is not met, this permit becomes invalid on the date of expiration. Any new activities or changes in activities with threatened or endangered species will require that your permit be amended. You are not authorized to conduct any new activities or to change any permitted activities until you have requested and have received a new or an amended permit.
- P. Permittees shall submit annual reports of activities to the Project Leader (see attached list) by December 31 each year the permit is in effect. Annual reports provide us with information necessary to evaluate the success of permitted activities. If no activities occurred over the course of a year, that information shall be indicated in the annual report. Otherwise, the annual report should include, but not be limited to: 1) an introduction section addressing reasons and objectives for taking the species; 2) a methodology section addressing data collection and analysis procedures; 3) a results section that contains the following information: summary presentations and discussions of important research results, maps and descriptions of locations sampled, results of all sampling efforts, numbers of individuals intentionally and incidentally killed, including dates, locations, and circumstances of take, other pertinent observations made during sampling or research efforts regarding the status or ecology of the species, including observed or perceived threats to the species in research areas; 4) planned future activities for the upcoming year if authorized under the permit; 5) a conclusion section that specifically provides recommendations for the recovery of the species.
- Q. All reports or other documents that include information gathered under the authority of Region 6 section 10(a)(1)(A) permits (e.g., reports prepared by consulting firms or their clients) shall reference permit number TE-053737. Copies of such documents shall be provided to the field office upon their completion. Draft documents and other information resulting from work conducted under the authority of this permit shall be submitted to the Service upon request.

**List of Contacts:**

Permit Coordinator, Ecological Services, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225, telephone 303-236-4256

## Colorado

Project Leader, Ecological Services, 764 Horizon Drive, Building B, Grand Junction, Colorado 81506, telephone 970-243-2778

Resident Agent in Charge, Law Enforcement, 9297 South Wadsworth Blvd., Littleton, Colorado 80128, telephone 720-981-2777

## Montana

Wildlife Lab Supervisor, Montana Department of Fish, Wildlife, and Parks, P.O. Box 200701, Helena, Montana 59620-0701, telephone 406-444-2535

Project Leader, Ecological Services, 585 Shepard Way, Helena, Montana 59601, telephone 406-449-5225

Resident Agent in Charge, Law Enforcement, 2900 Fourth Avenue, N., Suite 300, Billings, Montana 59101, telephone 406-247-7355

LIST OF AUTHORIZED INDIVIDUALS FOR  
U.S. Forest Service  
Rocky Mountain Research Station

Individuals authorized to conduct activities pursuant to this permit:

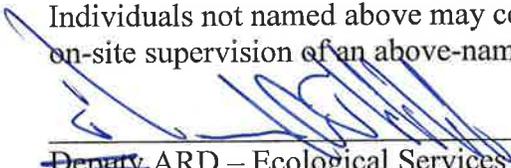
John Squires, principal investigator, Rocky Mountain Research Station, Missoula, Montana  
Elizabeth Roberts, wildlife biologist, White River National Forest, Colorado  
Erik Peterson, wildlife technician, Montana  
Megan Kosterman, wildlife technician, Montana

Crew Members in Colorado that trap/handle lynx:

Lance Downing, Calen Orłowski, Jeffrey Dacey, Joseph Ceradini

Each individual named above shall be responsible for compliance with the terms and conditions of this permit. The principal officer identified on box 8 on the face of this permit is responsible to ensure that the activities of all individuals listed herein are in compliance with the terms and conditions of this permit.

Individuals not named above may conduct activities pursuant to this permit **only** under the direct, on-site supervision of an above-named authorized individual.

  
\_\_\_\_\_  
Deputy ARD – Ecological Services

  
\_\_\_\_\_  
Date

*This List of Authorized Individuals (List) is valid only if it is dated on or after the permit issuance date. This permit will be considered invalid without this List.*

To request changes to this List, the permittee shall submit a written request to the Project Leader (see attached list). The request shall include the name of each individual to be appended to the List; a resume of qualifications of each person to be appended to the List detailing their experience with each species and type of activity for which authorization is requested; the names and telephone numbers of a minimum of two references; and the names of individuals to be deleted from the List, if applicable.

bcc: ES/Grand Junction  
ES/Helena  
LE/Littleton  
LE/Billings  
permit file  
ES rf

Olsen/06/05/2012

# HOW TO AVOID INCIDENTAL TAKE OF LYNX

*While Trapping or Hunting  
Bobcats and other Furbearers*



The purpose of this publication is to help achieve the goal of reducing injury and mortality to the Threatened Canada lynx population in the contiguous United States, which may occur as a result of hunting or trapping bobcats and other furbearers. This pamphlet was produced as a joint effort between the United States Fish & Wildlife Service and the International Association of Fish and Wildlife Agencies.

The mission of the U.S. Fish & Wildlife Service is working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.

The International Association of Fish and Wildlife Agencies governmental members include the fish and wildlife agencies of the states, provinces, and federal governments of the U.S. and Canada. All 50 states are members. The Association has been a key organization in promoting sound resource management and strengthening federal, state, and private cooperation in protecting and managing fish and wildlife and their habitats in the public interest.

# ACKNOWLEDGEMENTS

Primary authors Howard Golden, Alaska Department of Fish and Game, and Tom Krause, National Trappers Association, wish to recognize the significant efforts of Gordon R. Batcheller, New York State Division of Fish, Wildlife & Marine Resources and Lori Nordstrom, USFWS Montana Field Office. Additionally, the input received from the following reviewers was greatly appreciated:

Jerry Apker

Ted N. Bailey

Ed Bangs

Ed Boggess

Larry D. Cooper

Larry Dickerson

John Erb

Brian Giddings

Walter Jakubas

Daryl Lutz

Donny Martorello

George Matula

Mark McCollough

Wayne Melquist

Carter Niemeyer

John Olson

Paul O'Neil

Eric Orff

John Organ

Gina Patton

Bill J. Paul

Tim F. Reis

Kim Royar

Adam D. Vashon

Jennifer Vashon

Donald J. Wilda

Mike Wolfe



Lynx  
©Corel Corp.

# HOW TO AVOID INCIDENTAL TAKE OF LYNX

## *While Trapping or Hunting Bobcats and Other Furbearers*

Canada lynx were listed by the U.S. Fish & Wildlife Service as Threatened in the contiguous United States under the Endangered Species Act on March 24, 2000. As such, harvesting lynx is no longer permitted in any state except Alaska. In the contiguous United States, lynx may occur in Colorado, Idaho, Maine, Michigan, Minnesota, Montana, New Hampshire, New York, Oregon, Utah, Vermont, Washington, Wisconsin, and Wyoming.

Harvest of bobcats and other furbearers, whether by trapping or hunting, is not affected by this ruling. However, trappers and hunters must use every reasonable effort to avoid taking lynx where they may occur in the contiguous 48 states.

Lynx are very similar in appearance and habits to bobcats, and their range overlaps with them and other furbearer species. Therefore it is important for trappers and hunters to know how to distinguish lynx from bobcats, to recognize their preferred habitat types, and to avoid capturing or harvesting lynx. Trappers must also learn what to do if a lynx is caught incidentally.

# Identifying Characteristics and Background Information

## *Description*

Lynx (*Lynx canadensis*) and bobcats (*Lynx rufus*) are medium-sized wild cats. Adult males are usually larger than females in both species. Lynx weights average 24 pounds for males and 20 pounds for females. Bobcat weights average 26 pounds for males and 15 pounds for females. Average lengths (from nose to tip of tail) are very similar for lynx and bobcats: 34 inches for males of both species, 32 inches for female lynx, and 31 inches for female bobcats.

Bobcat pelts may be light gray, yellowish brown, buff, brown, or reddish brown and streaked or spotted with black or dark brown. Under portions of the body are white with black spots and with black bars on the fore legs. Lynx generally have more gray and less red in their pelts than bobcats and the belly fur is grayish-white or buff-white with mottled, indistinct black spots.

Lynx have ear tufts and facial ruffs on their cheeks that are larger and more conspicuous than those on bobcats. Ear tufts are usually longer than 1 inch on lynx but shorter than 1 inch on bobcats. Bobcat and lynx tails are approximately 4–6 inches long and match their pelt color except for the tip (about the last inch). The tip of the tail on bobcats is usually black only on the upper side whereas on lynx the entire tip is black.



©Tom Krause  
Belly Markings  
Lynx (left),  
Bobcat (right)

*Lynx spots are mottled. Bobcats have more distinct spots contrasted with whiter fur.*



©Tom Krause

*Lynx tails appear much the same viewed top (top left) or bottom (bottom left). The lynx tail tip is completely black all around, while bobcat tails show black bars with a white tip when viewed from above (top right) and show a lot of white underneath (bottom right).*



©Tom Krause

The hind legs of both bobcats and lynx are longer than their fore legs, which help them in springing to catch prey. However, the hind legs are even more disproportionately large on lynx, causing them to have a “stooped” appearance. Lynx also have much larger feet than bobcats. This gives them a “snow-shoe-like” advantage chasing prey in deep snow.



©Tom Krause



©Tom Krause

Top Left:

*Bobcats usually have ear tufts shorter than 1 inch.*

Top Right:

*Heavily furred bobcats might appear lynx-like, with significant ear tufts and cheek ruffs.*



Left:

*Lynx usually have ear tufts longer than 1 inch.*

©RJ & Linda Miller Photography

## *Sign*

Lynx tracks in snow are generally less distinct than bobcat tracks and often display a powder-puff appearance as a result of abundant foot hair. In wet or compacted snow, lynx tracks sometimes display smaller toe pads than are evident in bobcat tracks. Back feet often follow in the front foot tracks of both species. When walking, the stride (distance between footprints of the same foot) is 5–16 inches for bobcats and 12–28 inches for lynx. Both bobcat and lynx track trails tend to “wander” compared with the more straight-line patterns of wild canids (foxes, coyotes,



H. Golden, ADF&G  
*A set of lynx tracks in snow.*



B. Giddings, Montana FWP  
*A set of bobcat tracks in snow.*

and wolves). Lynx and bobcats travel and hunt with a deliberate and methodical walking pattern, rarely bounding unless chasing prey.

Lynx tracks are approximately 3–3¾ inches long and 3½–4½ inches wide in dirt and up to 4½ inches long and 5 inches wide in snow. Bobcat tracks are approximately 1¾–2½ inches long and 1¾–2½ inches wide in dirt and up to 2½ inches long and 2¾ inches wide in snow. Both bobcats and lynx have 4 toe pads on the front and hind feet. Claw marks typically do not show as they do with canids. Because lynx have more hair on their feet, their toe pads are usually less distinct than the toe pads of bobcats.



Montana FWP  
*Tracks are shown with shaded area representing impression of hair in the snow.*

### *Life History and Diet*

Lynx normally breed during March–April while bobcats breed during December–March in the southern portion of their range and during March–April in the northern portion. Litter sizes vary for lynx from 4 to 5 when prey is abundant to 2 to 3 when prey is scarce. Bobcat litter sizes range from 1 to 6 and average 2.7 kittens. The young of both species are independent by age 1 year, and by 2 years of age they have grown to full size and usually breed.

The snowshoe hare is by far the most important prey item for lynx. The availability of hares largely controls lynx abundance across most of their range. Other prey species important to lynx are red squirrels, mice, other rodents, and birds. Bobcat diet consists mainly of cottontail rabbits, jackrabbits, and snowshoe hares, but they also consume mice, other rodents, birds, and deer.

### *Distribution and Habitat Preferences*

Lynx occur across most of Alaska and Canada. Since 1990 in the contiguous 48 states, lynx or their tracks have been documented in Colorado, Idaho, Oregon, Maine, Michigan, Minnesota, Montana, New Hampshire, Utah, Washington, Wisconsin, and Wyoming. Established populations of lynx are present in northern Maine, northeastern Minnesota, western Montana, western Wyoming, and north-central Washington. A small population was recently reintroduced in Colorado.

Habitat types preferred by lynx are variable, ranging from old-growth coniferous forests to coniferous or mixed forests that are regenerating after fire or logging. Forests that are growing back after fire or logging often provide excellent food and cover for hares, and therefore attract lynx. It is extremely rare for lynx to be found in deserts, prairies, or farmland habitats.

Bobcats are widely distributed across the United States. They are rare along portions of the mid-Atlantic coast with dense human populations. Bobcat densities are usually greater in southern states. Their northern distribution may be limited by snow depth.

Bobcats seem to prefer areas with high prey abundance and dense understory vegetation. Forest edges and rocky ledges and outcrops are also important terrain features. Bobcats thrive in a variety of habitats including dense old-growth forests, hardwood and hardwood-mixed forests, brushy habitats, deserts, prairies, swamps, and farmland habitats.

Both lynx and bobcats seem to use the convenience of logging roads in forests to aid travel.

## Trapping Methods to Help Avoid Catching Lynx

To avoid lynx while trapping bobcats, trap sets should be made where bobcats are known to exist. Making

trap sets near existing bobcat tracks is often successful because bobcats often reuse the same travel patterns within their territories. Bobcats also tend to use areas where cottontail rabbits are abundant. Trap set locations that tend to avoid lynx include open meadows, pastures, and crop lands. Lynx rarely use agricultural lands and generally prefer to hunt and travel in forested or brushy areas.



B. Giddings, Montana FWP  
*Leaning poles for marten and fisher should be less than 6 inches in diameter.*

*Whenever a lynx track is identified, trap and snare sets should not be made in the vicinity.*

Trap sets that are effective for bobcats also appeal to lynx. Lures and baits that appeal to one species appeal to the other as well. Visible baits of rabbits, hares, or parts of rabbits or hares should not be used

if lynx may frequent the area. Flags or other suspended sight-attractants (such as bird wings, feathers, pieces of fur, etc.) also should not be used near the traps if lynx may be present.

Incidental captures of lynx can be reduced by using a proper-sized foothold trap. Number 2 coilspring or number 1.75 coilspring traps help discriminate against lynx captures due to a relatively small trap-jaw spread. However, these sized traps maintain excellent efficiency for bobcats (as well as foxes and coyotes). Another appropriate foothold trap to consider where lynx may be present is the padded number 3 coilspring trap.

All types of foothold traps should be staked solidly to prevent a trapped lynx (or bobcat) from harming itself by entangling around trees or brush. Trap attachment chains should be no longer than 18 inches between the trap and trap stake, be attached at the center of the trap frame, and should include at least two swivels.

Lynx often avoid traps set for foxes and coyotes when the traps are placed in open fields. The use of tainted rather than fresh meat baits also tends not to attract lynx while still providing significant attraction to coyotes and foxes.

Marten and fisher often use the same habitat as lynx. To avoid lynx in marten or fisher sets, baits and traps should be placed on leaning poles at least 3 to 4 feet above the ground or snow level. Leaning poles should

be no larger than 6 inches in diameter as this size is adequate for marten or fisher, yet discourages lynx from climbing to investigate the elevated trap set.

The typical walking behavior of a lynx frequently enables it to notice and avoid snares that are 5/64 inch thick or thicker. Snare loops for coyotes and foxes should measure at least 8 inches from side to side. Attention to these two details by trappers will usually enable a lynx to avoid or remove the snare before it closes.

## Bobcat Hunting Methods to Help Avoid Taking Lynx

Tracks should be closely examined and measured before any trailing dogs are released. (See “Sign” section). Any treed bobcat should carefully be identified and confirmed as not being a lynx before it is harvested. A treed lynx should be abandoned immediately with harnessed dogs in tow.

If predator calls are used in areas lynx may frequent, it is essential to identify and confirm any responding animals to assure a lynx is not shot. Since it may be difficult or impossible to positively identify a moving or partially hidden animal as a lynx or bobcat, it is best not to shoot at all whenever positive identity is unknown.

## Reducing Mortality and Injuries to Incidentally Captured Lynx

All trappers need to carry a catchpole to allow safe release of any unintended animal captures. Care should be taken to approach any trapped animals slowly to avoid their excessive movement. A trapped lynx will allow the catchpole loop to be placed over its head, but it can be expected to react when the loop is tightened. Tighten the catchpole loop only sufficiently to hold the lynx securely without preventing its ability to breathe. It is important to keep the head of the lynx pinned to the ground so that



B. Giddings, Montana FWP

*Use a catchpole to release any lynx taken incidental to harvests of other furbearers. Tighten the catchpole loop sufficiently to immobilize the lynx without cutting off its air supply. Then quickly remove the trap and release the catchpole loop.*

the front end of the body is restrained. Once the head is down, quickly place a foot, with light pressure only, on the hindquarters to restrain the rear legs. A heavy canvas is also useful to protect the trapper from the cat's claws. Once the lynx is immobilized, the canvas can be placed over the prone animal to quiet it as the trap is removed quickly. Then the catchpole loop should be relaxed and removed to allow the lynx freedom to escape.

If a catchpole is not available, an alternative method to release lynx is to cut a strong forked stick to allow the pinning of the lynx's neck and shoulder to the ground while the trap is removed.

Never attempt to render a trapped lynx unconscious with a blow to the nose or head or by any other means. Life threatening injury to the lynx may result.

Care should be taken at all times when releasing a lynx because they are capable of injuring the trapper with their teeth or claws. Always be aware a trapped lynx may try to kick at you with claws extended on any foot. Wearing thick gloves to release trapped animals is always wise.

If you need help releasing a lynx from a trap, please contact your local game warden or state fish and wildlife office (Monday-Friday, business hours) listed on the facing page for assistance.

|               |              |
|---------------|--------------|
| Colorado      | 303-291-7336 |
| Idaho         | 208-334-2920 |
| Maine         | 207-941-4466 |
| Michigan      | 517-373-1263 |
| Minnesota     | 218-327-4130 |
| Montana       | 406-444-2612 |
| New Hampshire | 603-271-3361 |
| New York      | 518-402-8885 |
| Oregon        | 503-947-6000 |
| Utah          | 801-538-4700 |
| Vermont       | 802-885-8831 |
| Washington    | 360-902-2200 |
| Wisconsin     | 608-266-8204 |
| Wyoming       | 307-332-2688 |

Front Cover:

Lynx

©RJ & Linda Miller Photography



September 2003

**RULEMAKING NOTICE FORM**

|               |             |                                                                                                                                                                                            |
|---------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notice Number | Rule Number | <b>Fis 301.02, 301.03, 301.031, 301.032, 301.041, 301.06, 301.07, 301.09, 302.01, 303.02, 303.03, 303.12, 307.01- 307.04, 308.01-308.07, 309.01(b), 1101.08 1102.12, 1401.01 - 1401.03</b> |
|---------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

---

|                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                      |           |                      |        |       |            |                      |                        |                      |
|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------|-----------|----------------------|--------|-------|------------|----------------------|------------------------|----------------------|
| <p>1. Agency Name &amp; Address:</p> <p>NH Fish and Game Department<br/>11 Hazen Drive<br/>Concord, NH 03301</p> | <p>2. RSA Authority: <b>206:23-c II.; 207:56 III., 208:1-a I. &amp; II., 208:2 I., 208:5-b, 208:7-a; 208:15-b, 208:22 I., III. &amp; VI., 209:12-a I. &amp; II., 210:23, 210:24-b, I., 212-B:4</b></p> <p>3. Federal Authority: _____</p> <p>4. Type of Action:</p> <table border="0" style="width: 100%;"><tr><td style="padding-left: 20px;">Adoption</td><td style="text-align: center;"><u>  <b>XX</b>  </u></td></tr><tr><td style="padding-left: 20px;">Amendment</td><td style="text-align: center;"><u>  <b>XX</b>  </u></td></tr><tr><td style="padding-left: 20px;">Repeal</td><td style="text-align: center;">_____</td></tr><tr><td style="padding-left: 20px;">Readoption</td><td style="text-align: center;"><u>  <b>XX</b>  </u></td></tr><tr><td style="padding-left: 20px;">Readoption w/amendment</td><td style="text-align: center;"><u>  <b>XX</b>  </u></td></tr></table> | Adoption | <u>  <b>XX</b>  </u> | Amendment | <u>  <b>XX</b>  </u> | Repeal | _____ | Readoption | <u>  <b>XX</b>  </u> | Readoption w/amendment | <u>  <b>XX</b>  </u> |
| Adoption                                                                                                         | <u>  <b>XX</b>  </u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                      |           |                      |        |       |            |                      |                        |                      |
| Amendment                                                                                                        | <u>  <b>XX</b>  </u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                      |           |                      |        |       |            |                      |                        |                      |
| Repeal                                                                                                           | _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |                      |           |                      |        |       |            |                      |                        |                      |
| Readoption                                                                                                       | <u>  <b>XX</b>  </u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                      |           |                      |        |       |            |                      |                        |                      |
| Readoption w/amendment                                                                                           | <u>  <b>XX</b>  </u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                      |           |                      |        |       |            |                      |                        |                      |

---

5. Short Title: **Fish and Game – 2012 Wildlife rules, wildlife control operator rules, and nongame rules**

---

6. (a) Summary of what the rule says and of any proposed amendments:

**The Department is proposing to make the following changes:**

**Readopt with amendments:**

**Fis 301.02 Wildlife Management Units to further divide WMUs D2 and G;**

**Fis 301.03 Deer Season relative to the taking of deer by requiring the first deer to be registered before taking the second deer; allowing any deer to be taken during the archery season; changing the days of taking antlered or any deer in for certain WMUs during the muzzleloader and regular firearms seasons; and updating references;**

**Fis 301.031 Special Deer Permits - Unit M, Archery, and Governor’s Island Permits relative to special permits for taking deer by updating references to other rules, removing the requirement to register the first deer before taking a second deer; and adding more information to the landowner permission form for taking deer on Governor’s Island;**

**Fis 301.032 Long Island Deer Permit relative to taking deer on Long Island by adding information on the landowner permission form; and updating references;**

**Fis 301.041 Crossbows relative to the use of crossbows during the regular deer season to remove the requirement for having the hunter's name and address on the bolt;**

**Fis 301.06 Bear Season relative to the taking of bear by updating references; removing the requirement for having the hunter's name and address on arrows; and prohibiting any person from taking more than 6 bear during the calendar year;**

**Fis 301.07 Moose Season relative to the taking of moose by removing the requirement for having the hunter's name and address on arrows;**

**Fis 301.09 Moose Season Lottery relative to the moose lottery by reducing the number of moose permits by 120 from 395 to 275 throughout various WMUs; requiring moose hunters to notify the department their intent to defer their permit up until the day before the moose hunt;**

**Fis 302.01 Wild Turkey relative to the taking of turkey by removing the requirement for having the hunter's name and address on arrows;**

**Fis 303.02 Muskrat, Mink, Otter and Beaver and Fis 303.03 Fox, Red and Gray, Raccoon, Weasel, Opossum and Skunk by adding weasel to Fis 302.02 relative to the taking of muskrat, mink, otter and beaver and remove it from Fis 303.03;**

**Fis 303.12 Restrictions on Certain Traps by adding further restrictions to foothold and body gripping traps; and by adding trap restrictions in WMU's A, B, C1, C2, D1, D2East, E and F for the protection of lynx;**

**Fis 307.04 Baiting Wildlife on State-Owned or Managed Land by updating a reference;**

**Fis 308.02 Licensing Requirements for wildlife control operators by adding further restriction for relative to bat exclusion: prohibiting bat exclusion from unoccupied buildings from May 15 to August 15;**

**Fis 308.03 Trapping Restrictions for wildlife control operators by updating references in the rule and updating references;**

**Fis 308.04 Level I Wildlife Control Operator relative to the requirements specific to level I operators by updating references;**

**Fis 308.05 Level II Wildlife Control Operator relative to the requirements specific to level II operators by adding additional reporting information relative to bat exclusion and updating references;**

**Fis 308.07 Wildlife Control Operator Forms by adding the additional information about bat exclusion to the wildlife control operator III form;**

**Fis 1101.08 Permanent Disabled Crossbow Permit by specifying that persons holding a permanent disabled crossbow permit shall not use longbows, recurve bows or compound bows while hunting game species;**

**Fis 1102.12 Use of Dogs to Take Bear by also allowing the permit for permit to take bear with dogs to be mailed and postmarked prior to the taking of bear and updating references;**

**Fis 1401.03 Reptiles by renumbering as 1401.03 and adding restrictions for a daily and season limit of 2 reptiles of each species of native reptiles as listed; and only allow the taking of snapping turtles less than 6 inches or 12 to 15 inches in length as measured from the front to rear along the top of the carapace.**

**Adopt:**

**Fis 1401.01 General Provisions for Amphibians and Reptiles relative to the manner and methods for taking native amphibians and reptiles; and**

**Fis 1401.02 Amphibians relative to restrictions for a daily and season limit of 5 amphibians of each species of native amphibians as listed.**

**Amend Fis 309.01 (b) Chronic Wasting Disease (CWD) by removing New York from the definition of ‘CWD positive jurisdiction’.**

**Readopt with no changes:**

**Fis 307.01 Baiting for Wildlife relative to the restrictions for baiting wildlife;**

**Fis 307.02 Baiting for Black Bear relative to the restrictions for baiting black bear;**

**Fis 307.03 Wild Turkey relative to the prohibition on baiting for turkey;**

**Fis 308.01 Definitions relative to definitions used in the wildlife control operator rules; and**

**Fis 308.06 Reports relative to the submission of wildlife control operator reports.**

6. (b) Brief description of the groups affected:

**These rules affect: persons wishing to take deer, bear, moose, turkey and furbearers; wildlife control operators and persons taking native amphibians and reptiles.**

6. (c) Specific section or sections of state statute or federal statute or regulation which the rule is intended to implement:

| <b>Rule(s)</b> | <b>State Statute (RSA)</b> | <b>Federal Statute</b> | <b>Federal Regulation</b> |
|----------------|----------------------------|------------------------|---------------------------|
|----------------|----------------------------|------------------------|---------------------------|

|                     |                                                      |  |  |
|---------------------|------------------------------------------------------|--|--|
| Fis 301.02          | RSA 208:1-a, 208:2,<br>208:22, 208:22-a,<br>209:12-a |  |  |
| Fis 301.03          | RSA 208:2, I, 208:5,<br>208:5-a                      |  |  |
| Fis 301.031         | RSA 208:2 I, 208:5-b                                 |  |  |
| Fis 301.032         | RSA 206:23-c, 207:10-c                               |  |  |
| Fis 301.041         | RSA 207:10-c                                         |  |  |
| Fis 301.06          | RSA 207:3-d, 208:22,<br>208:24                       |  |  |
| Fis 301.07          | RSA 208:1-a                                          |  |  |
| Fis 301.09          | RSA 208:1-a                                          |  |  |
| Fis 302.01          | RSA 209:12-a                                         |  |  |
| Fis 303.02          | RSA 206:10; RSA<br>210:23                            |  |  |
| Fis 303.03          | RSA 207:56                                           |  |  |
| Fis 303.12          | RSA 210:23                                           |  |  |
| Fis 307.01- 307.04  | RSA 207:3-d, 208:1-e,<br>208:2                       |  |  |
| Fis 308.01-308.07   | RSA 210:24-b                                         |  |  |
| Fis 309.01(b)       | RSA 206:10, I                                        |  |  |
| Fis 1101.08         | RSA 207:10-c                                         |  |  |
| Fis 1102.12         | RSA 208:22                                           |  |  |
| Fis 1401.01-1401.03 | RSA 212-B:4                                          |  |  |
|                     |                                                      |  |  |

7. Contact person for copies and questions including requests to accommodate persons with disabilities:

Name: **Sandra Falicon**

Title: **Legislative/Rules Coordinator**

Address: **NH Fish and Game Department  
11 Hazen Drive  
Concord, NH 03221**

Phone #: **603-271-3511**

Fax#: **603-271-1438**

E-mail: [comments@wildlife.nh.gov](mailto:comments@wildlife.nh.gov)

TTY/TDD Access: Relay NH 1-800-735-2964 or dial 711 (in NH)

8. Deadline for submission of materials in writing or, if practicable for the agency, in the electronic format specified: **April 12, 2012**

Fax

E-mail

Other format (specify):

9. Public hearing scheduled for:

Date and Time:

Place: **Monday, April 2, 2012 6:30 p.m.** – Keene High School, 43 Arch Street, Keene, N.H.

**Wednesday, April 4, 2012 6:30 p.m.** – N.H. Fish and Game Region 1 Office, North Country Resource Center, 629 B Main Street, Lancaster, N.H.

**Thursday, April 5, 2012 6:30 p.m.** – N.H. Fish and Game Department Headquarters, 11 Hazen Drive, Concord, N.H.

10. Fiscal Impact Statement (Prepared by Legislative Budget Assistant)

FIS # 12:029, dated 02/23/12

1. Comparison of the costs of the proposed rule(s) to the existing rule(s):  
When comparing the proposed rules to the existing rules, the proposed rules may decrease state restricted revenue by \$24,300 in FY 2013 and each year thereafter, and increase costs to state citizens and independently owned businesses by an indeterminable amount in FY 2013 and each year thereafter. A portion of the proposed rules are new rules, and will have no fiscal impact.
2. Cite the Federal mandate. Identify the impact on state funds:  
No federal mandate, no impact on state funds.
3. Cost and benefits of the proposed rules(s):
  - A. To State general or State special funds:  
The proposed rules reduce the number of moose permits issued per year by the Department from 395 to 275, a reduction of 120 permits. Based on information from 2011, the Department assumes of 102 of those permits would have gone to residents, for a fee of \$150 each, and the remaining 18 would have gone to non-residents, for a fee of \$500 each. As a result, the Department estimates the proposed rules will decrease state restricted revenue by \$24,300 annually ((102 x \$150) + (18 x \$500)). This decrease will be allocated as a \$23,100 reduction to the Fish and Game Fund, and a \$1,200 reduction to the Game account.
  - B. To State citizens and political subdivisions:  
The proposed rules impose additional restrictions on certain animal traps used in the State. The Department states these restrictions may increase the costs for certain trappers, to the extent trappers are subject to the restrictions.
  - C. To independently owned businesses:  
The proposed rules require level II wildlife control operators to report additional information related to bats. The Department state the collection and preparation of data for these reporting requirements may result in cost increases of an indeterminable amount for

level II wildlife control operators, to the extent that independently owned businesses are subject to these reporting requirements.

11. Statement Relative to Part I, Article 28-a of the N.H. Constitution:

The proposed readoption with amendments Fis 301.02, 301.03, 301.031, 301.032, 301.041, 301.06, 301.07, 301.09, 302.01, 303.02, 303.03, 303.12, 307.04, 308.02-308.05, 308.07, 309.01(b), 1101.08, 1102.12 and 1401.03 (currently Fis 1401.01); the adoption of Fis 1401.01 and 1401.02; amendment of Fis 309.01(b); and the readoption of Fis 307.01-307.03, 308.01, and 308.06 relating to the wildlife rules does not violate the New Hampshire Constitution, Part 1, Article 28-a. The rules do not impose any programs or responsibilities on any political subdivision of the state nor is any political subdivision involved in the process from an administrative perspective.

Readopt with amendment Fis 301.02, effective 6-1-06 (Doc # 8644), as amended effective 6-5-10 (Doc # 9720-A), to read as follows:

Fis 301.02 Wildlife Management Units.

(a) For purposes of this chapter, the state shall be divided into wildlife management units, also referred to as WMU's, described as follows:

(1) Wildlife management unit - A<sub>1</sub>: From Stewartstown Beecher Falls Bridge in Stewartstown east to Rte. 3 then north on Rte. 3 to the Canadian border then following the Canadian/US border west and south to the VT/NH border, Connecticut River and continuing south to the Stewartstown Beecher Falls Bridge;

(2) Wildlife management unit - A<sub>2</sub>: From the Stewartstown/Beecher Falls Bridge in Stewartstown east to Rte. 3 in Stewartstown then north on Rte. 3 to the Canadian/US border northeast to the ME/NH border then following this south to Rte. 16 in Wentworth's Location, south on Rte. 16 to Rte. 26 in Errol, west on Rte. 26 in Errol to Colebrook, west on Lemington Rd. to the Colebrook-Lemington Bridge, then north along the NH/VT state line to the Stewartstown/Beecher Falls Bridge;

(3) Wildlife management unit - B: From the junction of the Connecticut River and the Upper Ammonoosuc River in Northumberland, north along the NH/VT state line to the Colebrook/Lemington bridge in Colebrook, east on Lemington Rd. to Rte. 3 in Colebrook, south on Rte. 3 to Rte. 26 in Colebrook, east on Rte. 26 to Rte. 16 in Errol, south on Rte. 16 to Rte. 110-A in Dummer, west on 110-A to Rte. 110 in West Milan, west on Rte. 110 to Rte. 3 in Groveton, north on Rte. 3 in Groveton to the Upper Ammonoosuc Bridge, west along the Upper Ammonoosuc River to its junction with the Connecticut River;

(4) Wildlife management unit - C<sub>1</sub>: From the junction of the Lost Nation Rd. in Northumberland and Rte. 110, east on Rte. 110 to Rte. 16 in Berlin, south on Rte. 16 to Rte. 2 in Gorham, west on Rte. 2 to North Rd. in Jefferson, north along North Rd. to Grange Rd., north on Grange Rd. to Lost Nation Rd., north on Lost Nation Rd. to the junction of Lost Nation Rd. and Rte. 110 in Northumberland;

(5) Wildlife management unit - C<sub>2</sub>: From the junction of Rte. 16 in Wentworth's Location and the ME/NH line, south on Rte. 16 to Rte. 110-A in Dummer, west on 110-A to Rte. 110 in Milan, south on 110 to Rte. 16 in Berlin, south on Rte. 16 to Rte. 2 in Gorham, east on Rte. 2 to the NH/ME state line, north on the NH/ME state line to its junction with Rte. 16 in Wentworth's Location;

(6) Wildlife management unit - D<sub>1</sub>: From the junction of the Lost Nation Rd. in Northumberland and Rte. 110, south along Lost Nation Rd. to Grange Rd., south on Grange Rd. to North Rd., south on North Rd. to Rte. 2 in Jefferson, east on Rte. 2 to Rte. 115 in Jefferson, south on Rte. 115 to Rte. 3 in Carroll, south on Rte. 3 to I-93 in Franconia, north on I-93 to the NH/VT state line, north on the NH/VT state line, to the junction of the Connecticut and Upper Ammonoosuc River in Northumberland, east along the Upper Ammonoosuc River to the Groveton/Rte. 3 bridge, south along Rte. 3 in Groveton, east on Rte. 110 to the junction of Rte. 110 and the Lost Nation Rd.;

(7) Wildlife management unit - D<sub>2west</sub>: From the junction of Rte. I-93 and the Vermont border in Littleton, south on I-93 to Rte. **142 in Franconia, south on Rte. 142 to Rte. 18, west on Rte. 18 to Rte. 116, south on Rte 116 to Rte. 112 and Rte. 116, west on Rte 116 to Long Pond Rd. (i.e. North/South Rd.) in Benton, south on Long Pond Rd. to High St. in Glencliff, south on High St. to Rte 25, south on Rte. 25 to** ~~118 in Woodstock, south west on Rte. 118 to Rte. 25 in Warren, south on Rte. 25 to Rte. 25-A in Wentworth, west on Rte. 25-A to Rte. 10 in Orford, north on Rte. 10 to Rte. 25-A, west on Rte. 25-A to the VT/NH border, north on the VT/NH border to its intersection with Rte. I-93 in Littleton;~~

**(8) Wildlife management unit - D<sub>2east</sub>: From the junction of Rte. I-93 and Rte. 142 in Franconia, south on Rte. I-93 to Rte. 112 in Woodstock, south west on Rte. 112 to Rte. 118 in Woodstock, south west on Rte. 118 to Rte. 25 in Warren, north on Rte. 25 to High St., north on High St. to Long Pond Rd. (i.e. North/South Rd), north on Long Pond Rd. to Rte 116 in Benton, north on Rte. 116 to Rte. 18 in Franconia, east on Rte. 18 to Rte. 142, north on Rte. 142 to the intersection with Rte. I-93.**

~~(89)~~ Wildlife management unit - E<sub>1</sub>: From the junction of Rte. 2 and Rte. 115 in Jefferson east on Rte. 2 to Rte. 16 in Gorham, south on Rte. 16 to Rte. 302 in Glen, north on Rte. 302 to Rte. 3 in Twin Mountain, north on Rte. 3 to Rte. 115 in Carroll, north on Rte. 115 to its junction with Rte. 2 in Jefferson;

~~(910)~~ Wildlife management unit - E<sub>2</sub>: From the junction of Rte. 2 and Rte. 16 in Gorham, south on Rte. 16 to Rte. 302 in Conway, east on Rte. 302 to the NH/ME state line, then north along the state line to its junction with Rte. 2;

~~(1011)~~ Wildlife management unit - E<sub>3</sub>: From the junction of Rte. 302 and Rte. 3 in Twin Mountain, south on Rte. 3 to I-93, south on I-93 to Rte. 112 in Lincoln, east on Rte. 112 to Rte. 16 in Conway, north on Rte. 16 to Rte. 302 in Glen, north on Rte. 302 to its junction with Rte. 3 in Twin Mountain;

~~(1112)~~ Wildlife management unit - F: From the junction of Rte. 25-A and Rte. 25 in Wentworth, north on Rte. 25 to Rte. 118 in Warren, north on Rte. 118 to Rte. 112 in Woodstock, east on Rte. 112 to Rte. 16 in Conway, south on Rte. 16 to Rte. 113 in Chocorua, west on Rte. 113 to Rte. 113-A in Tamworth, west on Rte. 113-A in Tamworth to Rte. 113 in Sandwich, west on Rte. 113 to Rte. 3 in Holderness, west on Rte. 3 to Exit 24 of I-93 in Ashland, north on I-93 to Rte. 25, exit 26 in Plymouth, west on Rte. 25 to the junction with Rte. 25-A;

~~(1213)~~ Wildlife management unit – G<sub>1</sub>: From the junction of Rte. 25-A and the VT/NH border in Orford, east on Rte. 25-A to Rte. 10 in Orford, south on Rte. 10 to Rte. 25-A in Orford, east on Rte. 25-A to Rte. 25 in Wentworth, southeast on Rte. 25 to Rte. **118 in Rumney, south on Rte. 118 to Rte. 4 in Canaan, south and east on Rte 4 to** ~~I-93 in Plymouth, south on Rte. I-93 to Rte. 104 in New Hampton, south on Rte. 104 to Rte. 4 in Danbury, south on Rte. 4 to Rte. 11 in Andover, west on Rte. 11 to Rte. I-89 in New London, west on Rte. I-89 to the VT/NH border, north on the VT/NH border to its intersection with Rte. 25-A in Orford;~~

**(14) Wildlife management unit – G<sub>2</sub>: From the junction of Rte 118 and Rte. 25 in Rumney, southeast on Rte. 25 to Exit 26 of Rte. I-93 in Plymouth, south on Rte. I-93 to Rte. 104 in New Hampton, west on Rte. 104 to Rte. 4 in Danbury, north on Rte. 4 to Rte. 118 in Canaan, north on Rte. 118 to Rte. 25 in Rumney.**

- (~~13~~**15**) Wildlife Management Unit - H<sub>1</sub>: From the junction of I-89 and the NH/VT state line in Lebanon, south on I-89 to Rte. 10 in Grantham, south on Rte. 10 to Rte. 123 in Marlow, west on Rte. 123 to its junction with the Cold River in Walpole, west on Cold River to the NH/VT border, Connecticut River, north on the NH/VT border to I-89 in Lebanon;
- (~~14~~**16**) Wildlife management unit - H<sub>2-north</sub>: From the junction of Cold River and NH/VT border Connecticut River, in Walpole, east on Cold River to Rte. 123, east on Rte. 123 to Rte. 9 in Stoddard, east on Rte. 9 to Rte. 202 in Hillsborough, south on Rte. 202 to Rte. 101 in Peterborough, west on Rte. 101 to Rte. 9 in Keene, west on Rte. 9 to the VT/NH border, north to the Cold River;
- (~~15~~**17**) Wildlife management unit - H<sub>2-south</sub>: From the junction of Rte. 9 and the NH/VT border, east on Rte. 9 to Rte. 101 in Keene, east on Rte. 101 to Rte. 202 in Peterborough, south on Rte. 202 to the NH/MA border, west on the NH/MA border to the NH/VT border (Connecticut River), north on the NH/VT border, Connecticut River to its intersection with Rte. 9;
- (~~16~~**18**) Wildlife management unit - I<sub>1</sub>: From the junction of I-89 and Rte. 11 in New London, north on Rte. 11 to Rte. 4 in Andover, north on Rte. 4 to Rte. 104 in Danbury, north on Rte. 104 to I-93 in New Hampton, south on I-93 to I-89 in Concord, north on I-89 to Rte. 11 in New London;
- (~~17~~**19**) Wildlife management unit - I<sub>2</sub>: From the junction of I-89 and Rte. 10 in Grantham, south on I-89 to Rte. 9 in Hopkinton, south on Rte. 9 to Rte. 123 in Stoddard, west on Rte. 123 to Rte. 10 in Marlow, north on Rte. 10 to I-89 in Grantham;
- (~~18~~**20**) Wildlife management unit - J<sub>1</sub>: From the junction of Rte. 113 and Rte. 3 in Holderness, north on Rte. 113 to Rte. 113-A in Sandwich, north on Rte. 113-A to Rte. 113 in Tamworth, east on Rte. 113 to Rte. 16 in Chocorua, north on Rte. 16 to Rte. 302 in Conway, east on Rte. 302 to the ME/NH line, south on ME/NH line to Rte. 109, west on Rte. 109 to Rte. 28 in Wolfeboro Center, south on Rte. 28/109 to Rte. 109 in Wolfeboro, north on Rte. 109 to Rte. 25 in Moultonboro, west on Rte. 25 to Rte. 25B in Center Harbor, along Rte. 25B to Rte. 3, north on Rte. 3 to its junction with Rte. 113 in Holderness;
- (~~19~~**21**) Wildlife management unit J<sub>2</sub>: From the junction of Rte. I-93 and Rte. 3 in Ashland, south on Rte. 3 to Rte. 25B in Center Harbor, east on Rte. 25B to Rte. 25 in Center Harbor, east on Rte. 25 to Rte. 109 in Moultonboro, southeast on Rte. 109 to Rte. 28/109 in Wolfeboro, north on Rte. 28/109 to Rte. 109 in Wolfeboro Center, east on Rte. 109 to its intersection with the ME/NH border, south along the ME/NH border to Rte. 202 in Rochester, south on Rte. 202 to Rte. 4 in Northwood, west on Rte. 4 to I-393 in Pembroke, west on I-393 to I-93 in Concord, north on I-93 to the junction of Rte. 3 in Ashland;
- (~~20~~**22**) Wildlife Management Unit - K: From the junction of Rte. 9 and Rte. 202 in Hillsborough, south on Rte. 202 to the NH/MA state line, east on the NH/MA state line to Rte. 13 in Brookline, north on Rte. 13 to Rte. 101 in Milford, north on Rte. 101 to I-293 in Manchester, north on I-293 to I-93, north on I-93 to I-89 in Concord, west on I-89 to Rte. 9 in Hopkinton, south on Rte. 9 to its junction with Rte. 202 in Hillsborough;

(2123) Wildlife management unit - L: From the junction of I-93 and I-393 in Concord, east on I-393 to Rte. 4, east on Rte. 4 to Rte. 202 in Northwood, north on Rte. 202 to NH/ME state line, south along the NH/ME state line to Little Bay, south along the Rockingham/Stafford County line in Little and Great Bay to the Squamscott River, south along the Squamscott River to Rte. 101, west along Rte. 101 to I-93 in Manchester, south on I-93 to I-293, north on I-293 to I-93 to I-393 in Concord; and

(2224) Wildlife Management Unit - M: From the junction of Rte. 13 in Brookline and the NH/MA border, north on Rte. 13 to Rte. 101 in Milford, north on Rte. 101 to Rte. I-293 in Manchester, east on I-293 to I-93, north on I-93 to Rte. 101 in Manchester, east on Rte. 101 to its junction with the Squamscott River in Exeter, north along the Squamscott River to Great Bay, north along the Strafford/Rockingham County line in Great and Little Bay to the NH/ME state line, east along the NH/ME state line to the Atlantic Ocean, south along the NH coast line to the NH/MA line, west along the NH/MA state line to its junction with Rte. 13 in Brookline.

(b) Whenever a wildlife management unit is referenced with only a letter, and that WMU has been divided into subwildlife management units with number, that reference shall include all of the area enclosed by those subunits. For example, WMU - J shall include WMU's J<sub>1</sub> and J<sub>2</sub>.

(c) Whenever a subwildlife management unit is referenced with a letter and number and that WMU has been further divided into smaller units, that reference shall include all of the area enclosed by those units. For example, WMU -H2 shall include H2-north and H2-south.

Readopt with amendment Fis 301.03, effective 5-28-08 (Doc #9163), as amended effective 4-21-09 (Doc #9458), and as amended effective 6-5-10 (Doc #9720-A) and (Doc #9720-B), to read as follows:

Fis 301.03 Deer Season.

(a) For purposes of this section the state shall be divided into wildlife management units as described in Fis 301.02.

(b) Wild deer shall be taken only from 1/2 hour before sunrise to 1/2 hour after sunset during the open seasons for taking deer.

(c) No deer shall be taken at any time on any island or in any waters in lakes or ponds, except as specified in Fis 301.031(c) or Fis 301.032.

**(d) No person shall take a second deer until the first deer has been registered except as provided in Fis 301.031(c), and Fis 301.032.**

(e) A person holding a license as described in RSA 208:5, may take deer with bow and arrow in all of the wildlife management units and Bear Brook Refuge, subject to the following:

(1) The open season for taking of **any** deer with bow and arrow in wildlife management units B through M shall be from September 15 to December 15 ~~subject to the following;~~

~~a. Antlered deer only shall be taken from September 15 through September 30; and~~

~~b. Any deer shall be taken from October 1 through December 15;~~

(2) The open season for taking **any** deer with bow and arrow in wildlife management unit A shall be September 15 to December 8 ~~subject to the following;~~

~~a. Antlered deer only shall be taken from September 15 through September 30; and~~

~~b. Any deer shall be taken from October 1 through December 8; and~~

(3) Notwithstanding any other rules, a person holding an archery license may take one deer pursuant to RSA 208:5, under such license;

(4) Any person taking deer pursuant to Fis 301.03(~~de~~) shall retain the head and hide for 48 hours from the time of registration;

(5) No bow shall be used for taking deer unless it will pull at least 40 pounds peak weight measured at 28 inches or less draw;

(6) No mechanically-drawn or released bow shall be used;

(7) Except as provided in RSA 207:7-a, deer shall not be taken by a bow while the person is in or on a motor vehicle;

(8) No person shall use any device secured to or supported by the bow for the purpose of maintaining the bow at full draw in a firing position;

(9) No arrow shall be used other than broadheads;

(10) Fixed blade broadheads shall not be less than 7/8 of an inch or more than 1 1/2 inches wide;

(11) Retractable blade broadheads may be smaller than 7/8 of an inch wide in flight, but shall not be less than 7/8 of an inch wide when open;

(12) There shall be no upper size limit on retractable blade broadheads; ~~and~~

~~(13) The name and address of the archer shall be plainly printed on each arrow.~~

(**ef**) A person holding a muzzleloader license pursuant to the provisions of RSA 214 and RSA 208:5-a may take deer with a muzzleloading firearm, during the 11 days immediately prior to the regular firearms season specified in (**fg**) as follows:

(1) No other firearm shall be used for the taking of deer during the period specified in (**ef**);

(2) Muzzleloading firearms shall be a single barrel, single shot firearm of no less than .40 caliber;

(3) No person shall have in possession while taking deer more than one muzzleloading rifle and one muzzleloading handgun;

(4) The wildlife management units A, B, C1, C2, D1, **D2-East**, E, F, **G2**, I1, I2 and J1 shall be open only to the taking of antlered deer;

~~(5) The wildlife management units D2 and J2 shall be open to the taking of any deer during the first day of the season and to the taking of antlered deer only during the remaining 10 days of the season;~~

~~(65) The wildlife management units **K-D2-West and G1** shall be open to the taking of any deer during the first 2 days of the season and to the taking of antlered deer only during the remaining 9 days;~~

~~(76) The wildlife management units H1, ~~and~~ H2, **J2, and K** shall be open to the taking of any deer during the first 3 days of the season and to the taking of antlered deer only during the remaining 8 days;~~

~~(8) The wildlife management unit L shall be open to the taking of any deer during the first 7 days of the season and to the taking of antlered deer only during the remaining 4 days of the season; and~~

~~(97) The wildlife management units **L and M** shall be open to the taking of any deer during all 11 days of the season.~~

~~(fg)~~ The season for taking deer by all legal methods shall be open for a period of 26 consecutive days beginning on the second Wednesday in November in wildlife management units B through M and 19 consecutive days in wildlife management unit A.

~~(gh)~~ Deer shall only be taken during the regular deer season as specified in ~~(fg)~~ as follows:

(1) The wildlife management units A, B, C1, C2, D1, **D2-East** E, F, **G2**, I1, I2 and J1 shall be open only to the taking of antlered deer;

~~(2) The wildlife management units D2 and J2 shall be open to the taking of any deer during the first day of the season and to the taking of antlered deer only during the remaining 25 days of the season;~~

~~(32) The wildlife management units **D2-West, G1, H1, H2, J2 and K** shall be open to the taking of any deer during the first 2 days of the season and to the taking of antlered deer only during the remaining 24 days of the season;~~

~~(4) The wildlife management units H1 and H2 shall be open to the taking of any deer during the first 3 days of the season and to the taking of antlered deer only during the remaining 23 days of the season;~~

~~(5) The wildlife management unit L shall be open to the taking of any deer during the first 7 days of the season and to the taking of antlered deer only during the remaining 19 days of the season; and~~

(~~6~~3) The wildlife management units **L and M** shall be open to the taking of any deer during the first 10 days of the season and to the taking of antlered deer only during the remaining 16 days of the season.

(~~h~~i) No person shall take more than one deer in a calendar year, except as provided in RSA 208:5, RSA 208:5-b, Fis 301.03(~~e~~), Fis 301.031, and Fis 301.032.

(~~j~~i) No shell shot, other than those using shot sizes of 00 buckshot or larger, shall be used for the taking of deer.

(~~j~~k) Immediately upon killing a deer, the licensee shall fill in and sign the appropriate deer tag and attach the tag to the deer.

(~~k~~l) The deer tag shall contain the following:

- (1) The licensee's name and street address;
- (2) The date and time of kill;
- (3) The wildlife management unit in which the kill occurred; and
- (4) Signature.

(~~m~~n) If requested, any person taking a deer shall take fish and game personnel back to the kill site and/or the site of carcass evisceration for purposes such as, but not limited to, verification of kill site or to obtain ovaries or other biological samples left behind.

(~~m~~n) Any person found guilty of violating this section shall be subject to the penalties of RSA 208:21, V.

Readopt with amendment Fis 301.031 effective 4-21-09 (Doc #9458), as amended effective 6-5-10 (Doc #9720-A) and (Doc #9720-B), to read as follows:

Fis 301.031 Special Deer Permits - Unit M, Archery, and Governor's Island Permits.

(a) Persons licensed to take deer under RSA 214:9, RSA 208:5, or RSA 208:5-a may apply, as specified in (5), for a special deer permit to take one additional deer in wildlife management unit M subject to the following:

- (1) Persons taking deer under the provisions of Fis 301.031(a) shall not take a second deer until the first deer has been legally registered;
- (2) Deer taken under this permit shall be antlerless deer only;
- (3) Deer may be taken by any legal method during the archery season as specified in Fis 301.03(~~e~~)(1)-~~b~~, the muzzleloader season as specified in Fis 301.03(~~e~~f) and during the regular season as specified in Fis 301.03(~~f~~g);

(4) Persons taking deer under a special deer permit in wildlife management M shall be licensed as follows:

- a. An archery license under RSA 208:5 shall be required to take deer with a bow and arrow during the archery season specified in Fis 301.03(~~de~~);
- b. A muzzleloader license under RSA 208:5-a and a regular hunting license under RSA 214:9 shall be required to take deer by a muzzleloader during the muzzleloader season as specified in Fis 301.03(~~ef~~); and
- c. A license under RSA 214:9 shall be required to take deer during the regular hunting season as specified in Fis 301.03(~~fg~~); and

(5) There shall be up to 8000 special deer permits issued for wildlife management unit M as follows:

- a. Four thousand special deer permits for wildlife management unit M shall be available on a first come – first served basis. Successful applicants may purchase a second special deer permit for wildlife management unit M at the same time they purchase their first permit;
- b. An applicant shall provide:
  1. Applicant's complete name and mailing address;
  2. Telephone number;
  3. Date of birth;
  4. Current year's resident or nonresident hunting or archery license number; and
  5. Signature of the applicant, signed subject to the penalties for unsworn false statements under RSA 641:3; and
- c. Illegible or incomplete applications shall be returned for correction and not considered until corrected;
- d. Permits shall be issued on a first-come first-serve basis when received;
- e. No person shall submit more than one application for a special deer permit for wildlife management unit M;
- f. No person shall have more than 2 permits;
- g. Applicants may apply:
  1. At the fish and game department Concord headquarters at 11 Hazen Drive, Concord, NH 03301;
  2. By mail at the address above in 1.; or

3. From the department's website at [www.wildlife.state.nh.us](http://www.wildlife.state.nh.us); and

h. The fee for permits shall be \$13.00 of which \$1.00 is the agent fee.

(b) Persons may take by bow and arrow only one additional antlered deer under a special deer permit for archery from September 15 through December 15 in wildlife management units B through M and from September 15 through December 8 in wildlife management unit A subject to the following:

~~(1) Persons taking deer under the provisions of Fis 301.031(b) shall not take a second deer until the first deer has been legally registered;~~

(21) The fee for the special deer permit described in (b) shall be \$15.00;

(32) Immediately upon killing a deer the permittee shall fill in the appropriate deer tag, sign the tag and attach the tag to the deer;

(43) The deer tag shall contain the following:

- a. The licensee's name and address;
- b. The date and time of kill;
- c. The wildlife management unit in which the kill occurred; and
- d. Signature; and

(54) A person who purchases a special deer permit for archery shall purchase it at the same time they purchase an archery license pursuant to RSA 208:5; and

(65) Any person under the age of 16 and any person over 68 who has a license pursuant to RSA 214:7-a may purchase a special deer permit for archery at any time.

(c) Persons may take additional deer by bow and arrow on Governor's Island, Town of Gilford under the provisions of a Governor's Island special deer permit subject to the following:

(1) No person shall take deer on Governor's Island, Town of Gilford without a Governor's Island special deer permit in addition to the appropriate license to take deer under RSA 208:5 for taking a deer with a bow and arrow;

(2) Each applicant for a Governor's Island special deer permit shall provide written landowner permission on a form provided by the department;

(3) The landowner shall provide on a permission form the following:

- a. The landowner's full name and signature, **signed subject to the penalties for making unsworn false statements under RSA 641:3**;
- b. The hunter's full name, and phone number;

- c. The ~~specific~~ **physical address or tax map number for the** parcel(s) of land on Governor's Island, ~~if the landowner owns more than one parcel~~ **for which permission is granted to hunt**;
  - d. An indication as to whether the landowner will allow baiting for deer;
  - e. A list of any other landowner stipulations regarding the hunting activities on the property such as but not limited to:
    - 1. The specific days of the week;
    - 2. Dates on which hunting will not be allowed;
    - 3. Parking locations;
    - 4. Times of the day that hunting will not be allowed;
    - 5. Locations and removal of deer stands;
    - 6. Distances from adjoining landowners; and
  - f. Date of signature; and
- (4) The hunter shall provide on the permission form his or her signature, **signed subject to the penalties for making unsworn false statements under RSA 641:3**, and the date signed;
- (5) The landowner permission form shall be filled out in quadruplicate. The original shall go to the hunter, one copy to the local conservation officer, one copy to the wildlife division and the other copy shall be retained by the landowner;
- (6) The Governor's Island special deer permit shall allow the taking of 6 deer of either sex;
- (7) The taking of deer shall be in accordance with the manner and methods for taking deer with bow and arrow as specified in Fis 301.03~~(e)~~(4) through (13);
- (8) The open season shall be the first weekday in October through December 15, except:
- a. No person shall take deer on Saturday or Sunday until after October 31; and
  - b. No person shall take deer on Columbus Day or for 4 consecutive days beginning on Thanksgiving Day; and
- (9) The taking of deer shall be from a portable tree stand at least 10 feet off the ground;
- (10) Safety belts or harnesses shall be used;

- (11) Baiting for deer shall be allowed under the Governor's Island special deer permit provided baiting shall be permissible as indicated on the landowner permission form. A permit to bait wildlife as required by Fis 1102.04 shall not be required;
- (12) Immediately upon killing a deer, the permittee shall fill in the Governor's Island special deer tag with the date and time of kill, and sex of deer, sign the tag and attach it to the deer;
- (13) All entrails of harvested deer shall be removed from the island;
- (14) Deer taken under this permit shall be registered as specified in RSA 208:15-d and shall comply with the requirements of RSA 208:16;
- (15) All deer wounded and not recovered shall be reported by calling (603) 271-3361 as soon as possible but not longer than 24 hours after the time the deer was wounded;
- (16) Any person who has taken 6 deer under a Governor's Island deer permit as specified in 301.031(c) and the deer have been legally registered, may purchase a second Governor's Island special deer permit which shall allow the taking of 6 additional deer;
- (17) Applicants for a second Governor's Island deer permit shall provide the first permit which has had the deer tags detached;
- (18) Governor's Island special deer permits and the landowner permission form shall be carried by all persons while taking deer on Governor's Island;
- (19) The fee for a Governor's Island special deer permit shall be \$10.00;
- (20) The permit and the landowner permission shall expire on December 15<sup>th</sup>; and
- (21) Applicants for a Governor's Island special deer permit shall provide the following:
  - a. Name, address and telephone number;
  - b. Date of birth;
  - c. Current archery license number; and
  - d. Signature, signed subject to the penalties for unsworn false statements under RSA 641:3.

Readopt with amendment Fis 301.032, effective 4-21-09 (Doc #9458), to read as follows:

Fis 301.032 Long Island Deer Permit.

(a) The purpose of this rule is to reduce the over-population of deer which exists on Long Island in the town of Moultonborough, NH, through the regulated use of recreational hunters and then to maintain that population at a level equal to the adjacent mainland. Because deer densities are currently too high for the existing habitat conditions, and because extremely aggressive efforts are necessary to reduce over abundant deer populations, extraordinary measures must be taken to remove female deer. Because the island is heavily

populated, and because landowner attitudes toward hunting vary, extra care must be taken to reduce any safety concerns and to increase the discreet nature of all actions taken.

(b) No person shall take deer on Long Island, Town of Moultonborough without a Long Island deer permit in addition to:

(1) The appropriate license to take deer under RSA 208:5 when taking deer with a bow and arrow; and

(2) A cross bow permit as specified in Fis 301.041 (~~4k~~) when taking deer with a crossbow

(c) Hunting shall be allowed only on parcels which are equal to or greater than one acre, as listed on the Town of Moultonborough Master List, prepared in connection with the first tax bill of each tax year in May. Parcels of land may be individual tracts or combinations of adjoining parcels in aggregate.

(d) Each applicant for a Long Island deer permit shall provide written landowner permission on a form provided by the department.

(e) The landowner shall provide on a permission form the following:

(1) The landowner's full name and signature, **signed subject to the penalties for making unsworn false statements under RSA 641:3;**

(2) The hunter's full name, and phone number;

(3) The ~~specific~~ **physical address or tax map number for the** parcel(s) of land on Long Island; ~~if the landowner owns more than one parcel~~ **for which permission is granted to hunt;**

(4) An indication as to whether the landowner will allow baiting for deer;

(5) A list of any landowner stipulations regarding the hunting activities on the property such as but not limited to:

a. The specific days of the week;

b. Dates on which hunting will not be allowed;

c. Parking locations;

d. Times of the day that hunting will not be allowed;

e. Locations and removal of deer stands;

f. Distances from adjoining landowners; and

g. Type of bow; and

(6) Date of signature.

(f) The hunter shall provide on the permission form his or her signature, **signed subject to the penalties for making unsworn false statements under RSA 641:3** and the date signed.

(g) The landowner permission form shall be filled out in quadruplicate. The original shall go to the hunter, one copy to the local conservation officer, one copy to the wildlife division and the other copy shall be retained by the landowner.

(h) The Long Island deer permit shall allow the taking of 6 deer of either sex.

(i) The taking of deer shall be in accordance with the manner and methods for taking deer with bow and arrow or crossbows as specified in Fis 301.041.

(j) The open season for taking deer by bow and arrow or crossbow shall be the first weekday in October through December 15, except:

(1) No person shall take deer on Saturday or Sunday until after October 31; and

(2) No person shall take deer on Columbus Day or for 4 consecutive days beginning on Thanksgiving Day.

(k) The taking of deer shall be from a portable tree stand at least 10 feet off the ground.

(l) Safety belts or harnesses shall be used.

(m) Baiting for deer shall be allowed under the Long Island deer permit provided baiting shall be permissible as indicated on the landowner permission form. A permit to bait wildlife as required by Fis 1102.04 shall not be required.

(n) Immediately upon killing a deer, the permittee shall fill in the Long Island deer tag with the date and time of kill, and sex of deer, sign the tag and attach it to the deer.

(o) All entrails of harvested deer shall be removed from the island.

(p) Deer taken under this permit shall be registered as specified in RSA 208:15-d and shall comply with the requirements of RSA 208:16.

(q) All deer wounded and not recovered shall be reported by calling (603) 271-3361 as soon as possible but not longer than 24 hours after the time the deer was wounded.

(r) Any person who has taken 6 deer under a Long Island deer permit as specified in 301.032(h) and the deer have been legally registered, may purchase a second Long Island deer permit which shall allow the taking of 6 additional deer.

(s) Applicants for a second Long Island deer permit shall provide the first permit which has had the deer tags detached.

(t) Long Island deer permits and the landowner permission form shall be carried by all persons while taking deer on Long Island.

- (u) The fee for a Long Island deer permit shall be \$10.00.
- (v) The permit and the landowner permission shall expire on December 15<sup>th</sup>.
- (w) Applicants for a Long Island deer permit shall provide the following:
  - (1) Name, address and telephone number;
  - (2) Date of birth;
  - (3) Current license number of the appropriate license for the intended method of hunting;
  - (4) An indication as to the type(s) of method used to take deer; and
  - (5) Signature, signed subject to the penalties for unsworn false statements under RSA 641:3.

Readopt with amendment Fis 301.041, effective 5-26-04 (Doc #8085), as amended effective 7-6-07 (Doc #8931), to read as follows:

Fis 301.041 Crossbows.

- (a) The following definitions shall apply to this section:
  - (1) "Crossbow" means a device consisting of a bow mounted to a rigid stock for discharging quarrels, bolts, or arrows and having a mechanical means to hold and release the drawn string.
  - (2) "Bolt" means a short projectile for a crossbow that resembles an arrow.
  - (3) "Quarrel" means a bolt with a 4-sided head and often used as a synonym for bolt.
- (b) A crossbow shall have a:
  - (1) Minimum pull of 125 pounds;
  - (2) Working mechanical safety; and
  - (3) Stock no less than 25 inches in length.
- (c) No person shall take deer with a bolt tip other than a broadhead.
- (d) Fixed blade broadheads shall not be less than 7/8 of an inch or more than 1 1/2 inches wide.
- (e) Retractable blade broadheads may be smaller than 7/8 of an inch wide in flight, but shall not be less than 7/8 of an inch wide when open.
- (f) There shall be no upper size limit on retractable blade broadheads.
- ~~(g) The hunter's name and address shall be plainly printed on each bolt.~~

(~~h~~g) No person shall take deer with a crossbow without a deer crossbow permit in addition to the regular hunting license to take deer under RSA 214:9, except as specified in (~~h~~), or a Long Island deer permit as specified in Fis 301.032 when taking deer on Long Island.

(~~h~~) Persons permitted to use a crossbow pursuant to RSA 207:10-c shall not be required to purchase the crossbow permit specified in this section but shall comply with all of the other requirements of this section.

(~~j~~i) In accordance with RSA 208:7-a, persons taking a deer with a crossbow shall only take deer during the regular firearms season specified in Fis 301.03 (~~g~~) or as specified in Fis 301.032.

(~~j~~) No deer crossbow permit shall be required for persons under 16 years of age who are accompanied by an adult licensed and permitted to take deer with a crossbow.

(~~k~~) Applicants for a deer crossbow permit may purchase the permit from Fish and Game Concord headquarters for a fee of \$5.00.

(~~m~~l) Applicants for a deer crossbow permit shall provide their:

- (1) Name;
- (2) Address;
- (3) Date of birth; and
- (4) Signature, signed subject to the penalties for making unsworn false statements under RSA 341:3.

(~~m~~) Deer taken with a crossbow under this permit shall be tagged with the regular firearm deer tag except as specified in Fis 301.032.

Readopt with amendment Fis 301.06, effective 5-28-08 (Doc #9163), as amended effective 4-21-09 (Doc #9458); as amended effective 6-5-10 (Doc #9720-A) and (Doc #9720-B); as amended effective 6-24-11 (Doc #9948-A) and (Doc #9948-B), to read as follows:

Fis 301.06 Bear Season.

(a) For purposes of this section the state shall be divided into wildlife management units, as described in Fis 301.02.

(b) The open season for bear by the use of bow and arrow or firearms, by methods other than by the use and aid of dogs or bait shall be as follows:

- (1) Wildlife management units H2, K, L and M shall open September 1 and close September 21;

- (2) Wildlife management units A, B, C2, D1, G, H1, I1, I2, J1 and J2 shall open September 1 and close the day before firearms deer season as specified in Fis 301.03(eg); and
  - (3) Wildlife management units C1, D2, E and F shall open September 1 and close the 14<sup>th</sup> day of the regular firearms season as specified in Fis 301.03(fg).
- (c) Black bear may be taken by the aid and use of bait in accordance with RSA 207:3-d, Fis 307.01 and Fis 307.02.
- (d) Dogs may be used for taking bear in wildlife management units A, B, C1, C2, D1, D2, E, F, G, H1, I1, I2, J1 and J2 for 51 consecutive days ending the last day of the muzzleloader deer season as specified in Fis 301.03(ef).
- (e) Wild black bear may be taken by the aid and use of not more than 6 dogs, after obtaining a permit pursuant to Fis 1102.12.
- (f) Training of bear dogs shall be in accordance with Fis 305.02.
- (g) In addition to the requirements in RSA 207:3-e, no person shall use telemetry equipment to track or locate bear dogs within 300 feet of a building occupied as a person's principle place of abode.
- (h) Licensed guides may guide for taking bear during the open season as specified in Fis 301.06(b), Fis 301.06(c), and Fis 301.06(d). The person licensed for guiding shall prior to guiding obtain from the department a permit to guide bear hunters. There shall be a limit of 35 permits per season to guide for taking bear as specified in Fis 1102.06. Bear guide permits shall be issued on a first-come first-served basis.
- (i) Each licensed guide who has been issued a permit to take a bear as described in Fis 1102.06 shall be issued 6 guided bear transportation tags described in Fis 1102.07 subject to the following:
- (1) All bear taken by hunters through the assistance of a licensed guide shall be tagged with both the hunters bear tag and a guided bear transportation tag from the guide who assisted the hunter;
  - (2) Section A of the tag shall be signed by the hunter and securely affixed to the carcass of the bear immediately upon killing the bear;
  - (3) Section A shall remain attached to the bear carcass or parts thereof until such time as the bear has been tagged by a New Hampshire conservation officer or fish and game personnel authorized by the director as required in Fis 301.06(p); and
  - (4) Section B of the guided bear transportation tag shall be completely filled out and mailed or forwarded by the licensed guide to fish and game headquarters, 11 Hazen Drive, Concord, NH 03301 within 5 days of the time of the kill.
  - (5) Guided bear transportation tags shall be non-transferable.
- (j) Wild black bear shall not be taken except by:
- (1) Firearms of a size larger than .22 caliber rimfire;

- (2) A shotgun loaded with a single ball;
- (3) Muzzleloaders not less than .40 caliber; or
- (4) Bow and arrow of at least 40 pounds peak weight measured at 28 inches or less draw.

(k) No person shall use any device secured to or supported by the bow for the purpose of maintaining the bow string at full draw in a firing position.

(l) Except as provided in RSA 207:7-a, bear shall not be taken by a bow while the person is in or on a motorized vehicle.

(m) No arrow shall be used other than broadheads as follows:

- (1) Fixed blade broadheads shall not be less than 7/8 of an inch or more than 1 1/2 inches wide;
- (2) Retractable blade broadheads may be smaller than 7/8 of an inch wide in flight, but shall not be less than 7/8 of an inch wide when open;
- (3) There shall be no upper size limit on retractable blade broadheads; and
- ~~(4) When arrows are used to take bear, the name and address of the archer shall be plainly printed on each arrow.~~

(n) Immediately upon killing a bear the licensee shall fill in the appropriate bear tag, sign the tag and attach the tag to the bear.

(o) The bear tag shall contain the following:

- (1) The licensee's name and street address;
- (2) The date and time of kill; and
- (3) The wildlife management unit in which the kill occurred.

(p) Any person who kills wild bear pursuant to this section shall, within 12 hours from the time of taking, notify a conservation officer and, within 24 hours, exhibit the whole bear or the following body parts of a bear for tagging with a numbered seal by a New Hampshire conservation officer or fish and game personnel:

- (1) Entire carcass, skinned or quartered, excluding viscera;
- (2) Legs and feet;
- (3) Intact skull;
- (4) Hide; and
- (5) Sex organs, including teats from females so that a positive sex determination can be made.

(q) At the time of tagging, the conservation officer or fish and game personnel shall remove a tooth from such bear and record other information as specified in Fis 301.05.

(r) If requested, any person who kills a wild black bear shall be required to take fish and game personnel back to the kill site, the site of carcass evisceration, or both for purposes such as, but not limited to, verification of kill site or to obtain ovaries or other biological samples left behind.

(s) No person shall take more than one wild black bear in a calendar year.

(t) No person shall take bear by trapping or snaring.

(u) No person shall possess the carcass or any part of the carcass of a wild black bear without the bear tag or registration seal attached to it or by special permission of the executive director or the executive director's agent.

(v) Notwithstanding Fis 301.06(u), no person shall possess a bear or any parts of the carcass of a bear given to the person by another unless each piece or package given to such person is clearly marked or labeled with the date of its receipt and the name and address of the donor.

**(w) No person shall assist in the taking of more than 6 bears in any calendar year.**

Readopt with amendment Fis 301.07, effective 5-28-28 (Doc #9163), as amended effective 6-5-10 (Doc #9720-A and Doc #9720-B), and as amended effective 1-1-11 (Doc 9800-A) to read as follows:

Fis 301.07 Moose Season.

(a) "Antlered moose" means a moose which has at least one antler 6 inches long measured from the tip of the main beam along the distal edge of the antler to the base of the antler burr at the skull.

(b) For purposes of this section the state shall be divided into wildlife management units, as described in Fis 301.02.

(c) The moose season shall be 9 consecutive days and shall open on the third Saturday in October.

(d) No moose shall be taken with the aid or use of dogs.

(e) No person other than the permittee and subpermittee shall participate in a joint hunt to take moose except that the permittee may employ one licensed guide. The licensed guide may direct, aid, assist, or instruct the permittee and subpermittee but shall not shoot a moose.

(f) No aircraft shall be used to locate moose or communicate the location of moose during the open moose season.

(g) No radio telemetry equipment, electronic calls, cell phones, radio transceivers, pagers or other communication devices shall be used to attract or take moose.

(h) No moose shall be taken within 300 feet of a class I, II, III, IV, or V highway, as classified pursuant to RSA 229:5. For purposes of this section both the hunter and the moose shall be not less than 300 feet from a class I, II, III, IV, or V highway.

(i) No moose shall be taken with rimfire firearms or with shotguns using shot loads including buckshot. In towns restricted to weapon types pursuant to RSA 207:3-b, 208:3, 208:3-a, 208:3-b, and 208:3-c, only shotguns loaded with a single ball, muzzle-loading rifle, pistols as specified in RSA 208:3-d or bow and arrow shall be permitted for the taking of moose, except pistols shall not be used in the Town of Bow pursuant to RSA 207:3-b.

(j) A person holding a current moose permit or subpermittee's permit may hunt moose with a muzzleloading firearm of not less than .45 caliber.

(k) Notwithstanding (e) above, a permittee taking moose under the provisions of RSA 208:1-aa may use additional guides to assist in carrying out such hunt as necessary for the safe and successful completion of the hunt.

(l) No bow shall be used for hunting moose unless it will pull at least 50 pounds peak weight measured at 28 inches or less draw.

(m) No mechanically-drawn or released bow shall be used, and moose shall not be taken by a strung bow from a motor vehicle.

(n) No arrow head shall be used other than broadheads as follows:

- (1) Fixed blade broadheads shall not be less than 7/8 of an inch or more than 1 1/2 inches wide;
- (2) Retractable blade broadheads may be smaller than 7/8 of an inch wide in flight, but shall not be less than 7/8 of an inch wide when open;
- (3) There shall be no upper size limit on retractable blade broadheads; and
- ~~(4) When arrows are used in such hunting the name and address of the person shall be plainly printed on each arrow.~~

(o) Only one moose shall be taken per permittee/subpermittee combination.

(p) Moose may be taken in the water.

(q) The permittee or the subpermittee may shoot the moose, but it shall be the responsibility of the permittee to tag the moose immediately upon killing, remove the moose and transport it to the biological check station as required by Fis 301.08.

(r) The moose tag shall contain the following:

- (1) The licensee's signature;
- (2) The date and time of kill;
- (3) Town of kill;

(4) Specific location of kill; and

(5) The wildlife management unit in which the kill occurred.

(s) The permittee shall remain with the moose during transportation to the biological check station. If the moose is shot by the subpermittee, both the permittee and subpermittee shall go to the check station to check the moose.

(t) The permittee and subpermittee shall only hunt in the wildlife management unit to which they are assigned by the department.

(u) The subpermittee shall always be accompanied by the permittee while hunting moose. All subpermittees shall be within sight and hearing, excluding electronic devices, when actual physical direction and control can be effected pursuant to RSA 207:1, XXX. All subpermittees under the age of 16 shall be accompanied by a permittee 18 years of age or older.

(v) The moose tag shall remain with the moose at all times until the moose is sealed at the biological check station, pursuant to RSA 208:9.

(w) Once the moose has been sealed as provided in Fis 301.07(u), a moose may be transported during the open season, and for 10 days after provided the registration seal remains firmly affixed to the moose at all times.

(x) The permittee, subpermittee, or both if requested, shall return with or without fish and game department personnel to the kill site, the site of evisceration or both for purposes such as, but not limited to, verification of kill site or to obtain ovaries or other biological samples left behind.

(y) Each permittee or subpermittee shall carry a moose permit and each permittee and subpermittee 16 years of age or older shall carry a hunting license at all times when hunting for moose and registering the moose at the check station.

(z) Any person leaving moose parts in the field shall place parts out of sight of roads traveled by conventional vehicles.

Readopt with amendment Fis 301.09, effective 6-5-10 (Doc #9720-A), as amended effective 6-24-11 (Doc #9948-A), to read as follows:

Fis 301.09 Moose Season Lottery.

(a) Application for the moose season lottery shall be made on an application described in Fis 1102.08.

(b) The applicant shall be at least 16 years of age by the application deadline.

(c) A non-refundable fee of \$15 for residents or \$25 for nonresidents, payable to New Hampshire fish and game department by cash, check or money order, shall accompany each application.

(d) Only one application per person shall be entered in the lottery and applications are non-transferable. Any person who provides an incorrect state of residency on an application shall be disqualified from the lottery process and shall not be eligible to receive a permit. State of residency for purposes of the moose lottery application process shall be the person's state of residence, pursuant to RSA 207:1, XXIII, at the deadline date for moose lottery applications. Proof of NH residency shall be the applicant's valid NH driver's license or NH non-driver's id card number issued by the NH department of safety, division of motor vehicles prior to the application deadline.

(e) Illegible applications and incomplete applications shall be returned and not considered. Corrected applications may be resubmitted.

(f) No late entries shall be accepted.

(g) Bonus points shall be accrued in accordance with RSA 208:1-a, II-a.

(h) No person shall accrue more than one point in a given year's lottery.

(i) A person's accrued points shall be lost if:

(1) The applicant fails to provide an eligible application for a given year's lottery;

(2) The applicant fails to provide notification of a driver's license number or non-driver identification number change as specified in (w);

(3) The successful applicant has paid the permit fee and does not return the permit by October 1 as specified in (t); or

(4) The applicant provides an incorrect state of residency as described in Fis 301.09(d).

(j) All applications shall be:

(1) Turned in to the department headquarters by 4:00 p.m. on the last Friday in May;

(2) Postmarked no later than midnight on the last Friday in May; or

(3) Submitted on-line as long as the transaction was started prior to midnight eastern daylight time on the last Friday in May.

(k) Applications shall be assigned a number on a first come first served basis when received at the department headquarters. Self-addressed and stamped receipts shall be returned as notification that the application has been received.

(l) The lottery drawing shall be:

(1) Held after the season dates have been adopted by rules; and

(2) Conducted in the following manner:

a. Selection of winning numbers shall be done by computer selection of random numbers;

- b. A total of ~~395~~**275** application numbers shall be drawn;
- c. A total of 500 additional numbers shall be drawn as alternates;
- d. The ~~395~~**275** moose permits shall be allocated as specified in Table 300.01 below:

Table 300.01 Moose Permit Allocation Table

| <u>Wildlife management Unit</u> | <u>No. of Permits For Either Sex<br/>Moose</u> | <u>No. of Permits Restricted To Antlerless<br/>Moose Only</u> |
|---------------------------------|------------------------------------------------|---------------------------------------------------------------|
| A1                              | <del>15</del> <b>5</b>                         | 5                                                             |
| A2                              | <del>45</del> <b>20</b>                        | <del>20</del> <b>15</b>                                       |
| B                               | <del>40</del> <b>20</b>                        | <del>10</del> <b>5</b>                                        |
| C1                              | <del>20</del> <b>15</b>                        | 5                                                             |
| C2                              | <del>30</del> <b>15</b>                        | 5                                                             |
| D1                              | <del>10</del> <b>5</b>                         | 0                                                             |
| D2                              | 10                                             | <del>0</del> <b>5</b>                                         |
| E1                              | 5                                              | 0                                                             |
| E2                              | 5                                              | 0                                                             |
| E3                              | 5                                              | 0                                                             |
| F                               | <del>15</del> <b>5</b>                         | 0                                                             |
| G                               | <del>30</del> <b>15</b>                        | <del>0</del> <b>15</b>                                        |
| H1                              | <del>10</del> <b>5</b>                         | 0                                                             |
| H2-north                        | 5                                              | 0                                                             |
| H2- south                       | 5                                              | 0                                                             |
| I1                              | <del>15</del> <b>5</b>                         | <del>0</del> <b>5</b>                                         |
| I2                              | <del>20</del> <b>10</b>                        | <del>0</del> <b>10</b>                                        |
| J1                              | <del>15</del> <b>5</b>                         | <del>0</del> <b>5</b>                                         |
| J2                              | <del>20</del> <b>5</b>                         | <del>0</del> <b>5</b>                                         |
| K                               | 10                                             | 0                                                             |
| L                               | <del>10</del> <b>15</b>                        | 0                                                             |
| M                               | <del>10</del> <b>5</b>                         | 0                                                             |

- e. Based on the order of computer selection, applicants shall be assigned a permit as follows:
1. Applicants shall be assigned a permit for either sex moose in a wildlife management unit indicated on their application;
  2. If all permits for either sex moose in those wildlife management units are filled, applicants shall:
    - (i) Be assigned to a permit for an antlerless moose provided their application indicates they are willing to hunt antlerless moose in one of the wildlife management units having these permits available; and
    - (ii) Not be assigned a permit if their application indicates they are not willing to hunt antlerless moose; and

3. Once all of the initially drawn applicants have been considered for permits:

- (i) Alternates shall be used to fill the remaining permits; and
- (ii) Successful applicants drawn for a permit shall be notified by mail within 10 working days; and

f. The percentage of nonresident numbers drawn shall not be greater than the percentage of nonresident hunting licenses sold during the previous calendar year, and nonresidents shall be randomly distributed throughout the wildlife management units.

(m) Alternates shall be chosen if a permittee chooses not to participate in the hunt and advises the department, in writing, of this decision. Alternates shall be selected in the order in which they were originally drawn in the lottery. Chosen alternates shall then be permittees. Alternates shall be assigned to the wildlife management unit which was assigned to the original permittee. These new permittees shall be notified by mail within 7 days after being selected.

(n) The permit fee shall be paid in full at fish and game headquarters in Concord no later than the last working day in July. Late payments received via U.S. mail shall be accepted provided they were postmarked no later than midnight on the third Friday of July. Alternates shall be chosen for applicants failing to pay the fee by the prescribed date. Alternates selected shall then pay within 14 days after being notified.

(o) The permittee shall submit the information specified in (p) below on the permittee and the subpermittee, if a subpermittee is designated, to the fish and game department so that it shall be received at fish and game headquarters in Concord by the last working day in July. Late information received via US mail shall be accepted provided they are postmarked not later than midnight on the third Friday in July. If an alternate is chosen as a permittee, designation of subpermittee and accompanying information shall be submitted with the payment.

(p) The information required in (o) of permittees and subpermittees shall be as follows:

(1) Confirmation of the permittee's intention to participate in the moose hunt signed subject to the penalties for making unsworn false statements under RSA 641:3;

(2) The subpermittee's:

- a. Complete name and mailing address;
- b. Date of birth; and
- c. Telephone number;

(3) A signed statement from the permittee and the subpermittee that neither has paid or bartered any thing for the privilege of being designated as a subpermittee and that they each have read and understand the current moose hunting rules signed subject to the penalties for making unsworn false statements under RSA 641:3.

(q) The permittee shall obtain a permit described in Fis 1102.09. There shall be no residency requirements for the subpermittee.

(r) No person shall act as a subpermittee for more than one permittee.

(s) The deadline for the permittee to change the subpermittee shall be 8 days prior to the start of the moose season.

(t) Once the fee for a moose permit has been paid, the permittee shall lose all accumulated points and not be eligible **to submit an application** for the next 3 application periods, unless the permittee returns the permit prior to October 1 so that an alternate may be notified to participate in the moose hunt.

(u) No permittee shall sell or barter the subpermittee portion of their permit.

(v) No person shall possess more than one moose permit as a permittee.

(w) If a person's driver's license number or non-driver identification number changes, the applicant shall notify the department on the application. If the department is not able to match the identity of the applicant with its records, the applicant shall provide their name, address, date of birth, their old identification number and new identification number.

(x) The executive director shall waive restrictions in the moose lottery process to delay the issuance of a moose permit for one year after being drawn due to a life-threatening illness or accident of the permittee or the permittee's active duty military service, any of which prevents the permittee from participating in the moose hunt.

(y) In order for the permit to be deferred, the permittee shall not have participated in any portion of the current year's moose hunt and shall provide the following:

(1) A request from the permittee to defer the permit which includes a brief explanation as to the deferment request signed subject to the penalties for making unsworn statements under RSA 641:3; and

(2) Either:

a. A signed statement from a physician stating that due to the permittee's medical condition the permittee is physically not able to participate in the current year's moose hunt; or

b. In the case of active military service, federal documentation which shows that the permittee will be on active duty during the current year's moose hunt.

(z) The permittee shall notify department headquarters no later than 4pm on the ~~third Friday of October~~ **day before the hunt begins** of said intent to defer the current year's permit.

(aa) The information referenced in 301.09(y) and the permit shall be received at department headquarters no later than the second Friday of November.

(ab) The executive director shall authorize permits, in addition to the permits in (1)(2) d., if the director determines that a department error resulted in the rejection of an eligible application for a permit,

provided the issuance will have no significant impact on the moose population and the application would have otherwise been successful based on its random number.

Readopt with amendment Fis 302.01, effective 6-5-10 (Doc #9720-A), as amended effective 11-29-11 (Doc #10037), to read as follows:

Fis 302.01 Wild Turkey.

(a) For purposes of this section, the state shall be divided into wildlife management units as described in Fis 301.02.

(b) The spring turkey seasons shall be May 3 through May 31.

(c) The fall turkey seasons shall be as follows:

(1) In wildlife management units B, ~~C1, C2, D1, D2, E, F, G, H1, H2, I1, I2, J1, J2, K, L and~~ M, the archery season shall run concurrently with the archery deer season; and

(2) In wildlife management units D1, D2, G, H1, H2, I1, I2, J1, J2, K, L and M, the shotgun season shall be the 5 days immediately preceding the moose season as specified in Fis 301.07(c).

(d) Shooting hours shall be as follows:

(1) The shooting hours during the spring turkey season shall begin one half hour before sunrise and end at 12:00 noon; and

(2) The shooting hours during the fall seasons for the taking of wild turkeys shall begin one half hour before sunrise and end one half hour after sunset.

(e) Persons licensed to take turkeys shall be entitled to take one bearded or male turkey per spring turkey season described in (b) and one turkey of either sex during the fall archery season or the fall shotgun season described in (c). No person shall take more than 2 turkeys per year.

(f) Nothing in this section shall prohibit a person who has taken a turkey from assisting another properly licensed turkey hunter by calling only. The person assisting by calling shall not possess a firearm or bow and arrow.

(g) Taking shall be done subject to the following:

(1) Shotguns between 10 and 20 gauge, inclusively, with shot size of #2 and smaller shall be the only firearms and shot permitted;

(2) Bows shall have at least a 30-pound peak draw weight measured at 28 inches or less draw;

(3) No mechanically-drawn or released bow shall be used;

(4) No arrow shall be used other than broadheads;

(5) Broadheads shall be as follows:

- a. Fixed blade broadheads shall not be less than 7/8 of an inch wide;
- b. Retractable blade broadheads may be smaller than 7/8 of an inch wide in flight, but shall not be less than 7/8 of an inch wide when open; and
- c. There shall be no upper size limit on retractable blade broadheads;

~~(6) The name and address of the archer shall be plainly printed on each arrow;~~

~~(76)~~ No person shall use live decoys, electronic calling devices, baiting, cooperative drives, or dogs during the spring turkey season;

~~(87)~~ No person shall use live decoys, electronic calling devices, baiting or cooperative drives during the fall archery season and fall shotgun season;

~~(98)~~ No person shall shoot at or take a turkey in a tree;

~~(409)~~ Persons licensed to take turkey shall immediately upon killing a turkey, fill out and detach the turkey tag from the license, and then securely attach to the leg of the turkey, the turkey tag bearing the name and address of the licensee who killed the turkey, the date and time of kill and WMU where the turkey was killed;

~~(410)~~ No person shall possess a turkey tag that was not issued to that person; and

~~(4211)~~ No person shall attach a turkey tag to a turkey that person did not kill.

(h) Registration and reporting shall be as follows:

(1) Any person killing a turkey shall bring the fully-feathered, intact carcass to a turkey registration station for examination and sealing within 24 hours of taking;

(2) If requested, the carcass of the turkey shall be exhibited to a conservation officer for examination to determine the method of kill; and

(3) The intact carcass may be eviscerated before bringing it to the registration station.

(i) No person shall transport a wild turkey unless it is tagged with a turkey tag and is accompanied by the permittee who took the turkey.

(j) No person shall at any time hunt, shoot, pursue, kill or take wild turkey in this state without first procuring a turkey permit and the applicable license required under RSA 214.

Readopt with amendment Fis 303.02, effective 6-5-10 (Doc #9720-A), to read as follows:

Fis 303.02 Muskrat, Mink, **Weasel**, Otter and Beaver.

- (a) The open season for taking muskrat, mink, **weasel**, otter and beaver by use of traps shall be:
  - (1) October 15 through April 10 in wildlife management units A, B, C, D, E and F; and
  - (2) November 1 through April 10 in wildlife management units G, H, I, J, K, L and M.
- (b) The open season for taking muskrat and mink, **weasel** by use of firearms or bow and arrow shall be:
  - (1) October 15 through April 10 in wildlife management units A, B, C, D, E and F; and
  - (2) November 1 through April 10 in wildlife management units G, H, I, J, K, L and M.
- (c) The season limit for otter shall be 10 otters.

Readopt with amendment Fis 303.03, effective 6-5-10 (Doc #9720-A), as amended effective 3-1-00 (Doc #9880-A), to read as follows:

Fis 303.03 Fox, Red and Gray, Raccoon, ~~Weasel~~, Opossum and Skunk.

- (a) The season for taking red and gray fox, raccoon, ~~weasel~~, opossum and skunk by use of traps shall:
  - (1) Open in WMUs A, B, C, D, E and F on October 15 and close on December 31; and
  - (2) Open in WMUs G, H, I, J, K, L and M on November 1 and close on January 15.
- (b) The season for taking raccoon, red and gray fox, ~~weasel~~, opossum and skunk by use of firearms or bow and arrow shall open on September 1 and close on March 31.
- (c) In addition to the provisions of Fis 303.03 (b), raccoons may be taken at night during the open season in accordance with the provisions of RSA 210:2.

Readopt with amendment Fis 303.12, effective 1-6-05 (Doc #8250), to read as follows:

Fis 303.12 Restrictions on Certain Traps.

- (a) **No foothold trap with auxiliary teeth added shall be allowed.**
- (b) **No foothold trap with an inside jaw spread greater than 6 ½ inches shall be set on land.**

**(c) Body gripping traps with an inside jaw spread greater than or equal to 6½ inches shall only be set:**

- (1) Five feet or more above the ground or surface of the snow with the exception of a snowstorm during the previous 24 hours; and**
- (2) In water for beaver or otter.**

**(d) The following restrictions on traps shall apply while trapping in WMU's A, B, C1, C2, D1, D2East, E and F:**

**(1) All foothold traps set on land must have one swivel in the chain/cable and one swivel connection to the trap;**

**(2) Body gripping traps with an inside jaw spread of 4 inches or greater and less than or equal to 5 inches which are set on the ground shall only be set as follows:**

- a. Set in water at all times;**
- b. Set under overhanging stream banks; and**
- c. Set as a blind set with no bait or attractant; and**

**(3) Body gripping traps with an inside jaw spread 4 inches or greater which are set off the ground shall only be set as follows:**

- a. Five feet or more above the ground or surface of the snow, with the exception of a snowstorm during the previous 24 hours;**
- b. Must be affixed to a leaning section of a tree, no greater than 4 inches in diameter that is free of branches and angled 45 degrees or greater;**
- c. The area within 4 feet of the trap must be free of trees, poles or other objects greater than 4 inches in diameter;**
- d. The areas within 4 feet of the trap shall be free of trees or poles that are angled less than 45 degrees to the ground at any point between the ground elevation and the elevation of the trap; and**
- e. The area within 4 feet of the trap shall be free of banks, bluffs, rocks or immediate rise in ground elevation; and**

**(4) Body gripping traps with an inside jaw spread greater than 5 inches and less than 6½ inches which are set on the ground shall only be set:**

- a. Covering the den entry of nuisance wildlife, or**
- b. If placed in a lynx exclusion device, as follows:**

1. The trap jaws must be completely within the device, the trap springs can be outside of the device;
2. The lynx exclusion device shall not have an opening greater than 6 inches by 8 inches;
3. The opening shall not be directly in front of the trap, but shall be either on the top or side of the device;
4. The trap set within the device shall be a minimum of 18 inches from the closest edge of the opening to the trap;
5. The back of the device shall be secured to withstand heavy pulling;
6. If using wire mesh with a wood box, the wire mesh shall wrap around two opposite sides of the box and be secured;
7. There shall be at least 2 attachment points for each side of the device where there is a joint, or where panels come together;
8. The exclusion device may be constructed of wood, or wire mesh that does not exceed 1½ inches openings from side to side;
9. The wire gauge shall be 16 gauge or less or a wire diameter of 0.05 inches or greater;
10. The opening slot in the device that allows the trap springs to extend outside the device shall be no more than 7½ inches wide and a height of no more than 1½ inches; and
11. The trap shall be anchored outside of the device.

~~No person shall set any conibear type body gripping trap which equals or exceeds the size of a 220 conibear except:~~

- ~~(1) Five feet or more above the ground or surface of the snow with the exception of a snowstorm during the pervious 24 hours; or~~
- ~~(2) In water for trapping beaver or otter.~~

Readopt Fis 307.01, effective 7-6-07 (Doc #8931), as amended effective 6-5-10 (Doc #9720-A), to read as follows:

Fis 307.01 Baiting for Wildlife.

(a) In addition to the requirements specified in RSA 207:3-d, a person engaged in the act of baiting furbearing animals or game animals with the exception of gray squirrel shall be in compliance with Fis 307.

(b) No person shall engage in the act of baiting furbearing animals or game animals with the exception of gray squirrel from April 15 to August 31;

(c) Pursuant to RSA 207:3-d II., "no person shall engage in the act of baiting on the property of another unless he has secured from the owner or occupant of the property upon which the bait is to be deposited a permit in writing signed by the owner or occupant" and complied with the other requirements specified in RSA 207:3-d;

(d) The permit to be used, and signed by the owner or occupant, in (c) shall be a quadruplicate blank permit to bait wildlife, F&G Form 180, and may be obtained from the Fish and Game Department or a conservation officer.

(e) The person to be engaged in baiting shall include the following on the permit to bait wildlife:

- (1) The name of the permittee;
- (2) The address of the permittee;
- (3) The telephone number of the permittee;
- (4) Species allowed to be baited;
- (5) The location of the land where baiting is to be allowed and described by town, road, and property name or White Mountain National Forest district and unit if on state-managed lands;
- (6) Directions to the exact location;
- (7) Name and address of landowner printed in a legible manner;
- (8) Telephone number of the landowner;
- (9) A blank for the issuing landowner to state stipulations, if any, to placing bait;
- (10) The signature of the landowner/lessee or, if public land, of the proper authority and
- (11) Date of issuance.

(f) Prior to baiting, the permittee shall distribute the copies of the completed and signed permit as follows:

- (1) The white copy shall be retained by the permittee;
- (2) The canary copy shall be left with the landowner;
- (3) The pink copy with a topographic map or copy thereof showing the specific location of said bait site shall be filed with the conservation officer in whose district baiting is to be done in accordance with RSA 207:3-d II. For purposes of this subparagraph, "filed" as used in RSA 207:3-d II. means presented to or mailed to the conservation officer; and
- (4) The goldenrod copy shall be mailed to the NH fish and game department wildlife division, 11 Hazen Drive, Concord, NH 03301.

(g) No bait shall be placed unless the pink copy with map has been presented to the conservation officer in hand or until 3 days has elapsed after date of postmark, if mailed.

(h) A person with a current hunting license shall be allowed a maximum of 2 active bait sites and a licensed N.H. hunting guide shall be allowed a maximum of 6 active bait sites. A bait site shall be considered active if the baiting season for the species allowed on the permit to bait wildlife is open or if no specific expiration date is noted on the permit form.

(i) No person other than the permittee listed on a permit to bait wildlife shall place bait or add any material to bait previously placed, under said permit.

(j) All permits to bait wildlife shall expire no later than December 31 following the date of issuance unless an earlier date has been specified on the permit form.

(k) A permit to bait wildlife shall be valid for a single permittee only and shall have only that permittee's name entered on the permit.

(l) A person placing bait shall post a sign bearing his or her name and address at each bait site, in a clearly visible manner not higher than 6 feet off the ground, on an identification sign made of durable material at least 3 inches by 6 inches in size.

(m) The sign specified in (l) above may bear the names of not more than 2 other persons permitted to take furbearing animals or game animals by aid and use of bait.

(n) No identification sign placed in compliance with this section shall be altered by the substitution or changing of the names listed thereon.

(o) No person other than the permittee authorized to place bait at a site shall remove, alter, or destroy any identification sign posted in compliance with (l) above.

(p) A licensed hunting guide authorized under the provisions of Fis 1106.03 and Fis 1300 shall not be required to post the names of paying clients attempting to take coyote, furbearing animals or game animals over lawful baits placed by him.

(q) No person shall place bait in public waters or on ice covered public waters.

(r) No person, except licensed hunting guides in accordance with (p) above, shall take furbearing animals or game animals by the aid or use of bait unless they are identified on the sign identified in (l) and (m).

(s) Upon the request of any conservation officer, a permittee or an applicant to bait shall be required to accompany the conservation officer to the proposed or existing bait site for purposes such as, but not limited to, determining the actual location of the bait site and compliance with the provisions of RSA 207:3-d and Fis 307.

(t) The refusal of a permittee or an applicant to comply with the provisions of paragraph (s) shall be grounds for the denial of the application, if pending, and/or the revocation of the permit if previously issued.

Readopt Fis 307.02, effective 6-5-10 (Doc #9720-A), to read as follows:

Fis 307.02 Baiting for Black Bear.

(a) In addition to the requirements of RSA 207:3-d and Fis 307.01 relative to the use of bait, black bear may be taken by the aid and use of bait subject to the following:

- (1) WMUs G, H1, H2, I1, I2, J1, J2, K, L, and M shall open September 1 and close September 21;
- (2) WMUs A, B, C1, C2, D1, D2, E, and F, shall open on September 1 and close September 28;
- (3) No person shall place bait for the purpose of attracting and taking bear at more than 2 bait sites, but no more than one bait site in WMUs A, B, D1, H1, H2, I2, K, L, and M; and
- (4) A licensed N.H. hunting guide authorized to guide bear hunters under the provisions of Fis 301.06(i) shall be allowed a maximum of 6 bait sites.

Readopt Fis 307.03, effective 7-6-07 (Doc #8931), to read as follows:

Fis 307.03 Wild Turkey. No person shall use the aid of bait to take wild turkeys as specified in Fis 302.01(g)(7) and (8).

Readopt with amendment Fis 307.04, effective 7-6-07 (Doc #8931), to read as follows:

Fis 307.04 Baiting Wildlife on State-Owned or Managed Land.

(a) A person may bait wildlife in accordance with RSA 207:3-d, Fis 307.01 and Fis 307.02 on lands owned or managed by the department, including:

- (1) The fish and game department;
- (2) The department of resources and economic development, division of state parks and division of state forests;
- (3) The department of transportation;
- (4) The department of environmental services, division of water;
- (5) Upon federal property such as the White Mountain National Forest (WMNF); and
- (6) Private property for which the fish and game department has authorization to issue permits to bait wildlife only after obtaining permission in writing to do so from the fish and game department.

(b) No person shall engage in the act of baiting furbearing animals or game animals with the exception of gray squirrel at more than 2 bait sites on state-owned or managed lands within any individual WMU.

(c) Licensed New Hampshire hunting guides may be allowed up to 3 active bait sites on state-owned or managed lands within any individual WMU.

(d) No person, to include licensed New Hampshire hunting guides, shall have more than 1 active bait site within an individual trapping unit as described in 303.4713(c).

(e) Each year baiting permits shall be awarded on state owned or state managed lands for which the department has authority to award such permits on a first come-first serve basis by postmark or hand delivered.

(f) Applicants shall make application after:

- (1) December 1 for the year following for baiting permits for coyote;
- (2) April 1 for baiting permits for furbearing animals or game animals with the exception of gray squirrel.

(g) Applicants for award of such baiting permits shall make application to the law enforcement division, on the permit form supplied by the department for baiting on state managed lands as described in Fis 307.01 (g); and

(h) Permit applications to bait wildlife shall not be considered unless received by the department on or before August 1.

(i) Permits awarded to bait wildlife on state owned or managed lands shall become effective on the first day of legal baiting of the year of issuance of the permit and shall be valid for the baiting season in that calendar year unless an earlier date has been specified on the permit form.

(j) In addition to the requirements specified in Fis 307.01 the following stipulations for baiting wildlife on state owned or managed lands shall apply:

- (1) Non-edible or non-digestible materials shall not be used as bait;
- (2) Containers used to hold bait such as barrels, plastic bags, pails and boxes and any bait material shall be removed from the property by the end of the open season for taking the species by the use of bait or upon expiration of the permit, whichever occurs first;
- (3) No person shall erect, build or use a tree stand or observation blind that damages or destroys a tree by inserting into the tree any metallic, ceramic or other object used as part of a ladder or observation deck nor shall any person cut any tree in connection with any of the activities regulated under this section;
- (4) All temporary blinds, platforms or other structures shall be removed from the property when the permit expires;
- (5) No baits shall be placed within 300 feet of buildings, roadways, pathways, trails or designated campsites so as to create a problem to others using the property; and
- (6) Permittees shall comply with Fis 307.01 (l)

(k) Failure to comply with these rules shall, after notice and opportunity for a hearing in accordance with Fis 200, result in permit revocation and no issuance of a permit for one year. Persons subject to permit revocation may appeal said revocation by requesting, in writing to the executive director, a hearing in accordance with Fis 200.

(l) A permit to bait wildlife on state owned or managed lands shall be valid for a single permittee only and shall have only that permittee's name entered on the permit.

Readopt Fis 308.01, effective 6-25-05 (Doc # 8385), to read as follows:

Fis 308.01 Definitions.

(a) "Level I wildlife control operator" means a person who is a licensed trapper and who is also engaged in the practice of trapping nuisance animals under RSA 210:24-b.

(b) "Level II wildlife control operator" means a person who is engaged in the commercial practice of trapping nuisance animals under RSA 210:24-b.

(c) "Nuisance animal" means wildlife that a landowner wants excluded or removed to protect their family or their property from injury or destruction by the animal specified in Fis 308.02(e).

Readopt with amendment Fis 308.02, effective 6-25-05 (Doc#8385), to read as follows:

Fis 308.02 Licensing Requirements.

(a) A wildlife control operator shall obtain a level I or level II wildlife control operator's license.

(b) All wildlife control operators shall meet the requirements of RSA 214:11-b relative to education.

(c) Wildlife control operators may trap, in the performance of their licensed activities, nuisance wildlife outside the regular trapping seasons.

(d) Wildlife control operators shall not trap endangered or threatened species, protected birds, deer, moose, bear or turkey.

(e) Wildlife control operators may only trap the following:

- (1) Beaver;
- (2) Otter;
- (3) Mink;
- (4) Fisher;
- (5) Porcupine;
- (6) Raccoon;
- (7) Bobcat;
- (8) Grey and red fox;
- (9) Weasel;

- (10) Skunk;
  - (11) Muskrat;
  - (12) Grey, red and flying squirrel;
  - (13) Rabbit and hare;
  - (14) Coyote;
  - (15) Opossum;
  - (16) Woodchuck;
  - (17) Chipmunks;
  - (18) Mice, rats, voles, moles, and shrews; and
  - (19) Snakes.
- (f) Bats shall be controlled by exclusion techniques only.
- (g) Bats shall not be excluded from unoccupied buildings from May 15 to August 15 unless the department of health and human services has documented a rabid bat on the property.**
- (h) Wildlife control operators may remove individual bats from living or work areas at any time of year.**
- (g) Any person trapping under a wildlife control operator license shall be exempt from the written landowner permission required under RSA 210:11, but shall be restricted to the property of that landowner for whom they are working.
- (h) Wildlife control operator licenses shall expire on June 30 each year.

Readopt with amendment Fis 308.03, effective 6-25-05 (Doc #8385), as amended effective 6-1-06 (Doc #8644), to read as follows:

Fis 308.03 Trapping Restrictions.

- (a) Traps shall be checked at least once in a calendar day pursuant to RSA 210:13 and the landowner or their agent may check box traps only for the wildlife control operator.
- (b) Snares shall only be used by wildlife control operators after completing a training course in the use of snares.
- (c) Trappers or wildlife control operators shall have held a trapping or wildlife control operator license for at least 3 years since 2000 before enrolling in the snaring course.

(d) A training course for the use of snares shall be approved by the executive director and include legal requirements, equipment review, methods and techniques for use, target selection, and humane considerations.

(e) Snares shall be non-locking relaxing snares equipped with a deer stop and a durable tag with the name of the person setting them stamped or engraved in a legible manner.

(f) Any domestic dog killed in a trap or a snare shall be reported to the department within 24 hours.

(g) Conibear type body gripping traps shall be set in accordance with Fis 303.4612.

(h) Any non-targeted wildlife, incidentally killed, that has no open season shall be reported to the department within 72 hours.

(i) Fisher and otter taken by wildlife control operators shall be sealed within 10 days and may be sold.

(j) During the open season for fisher and otter the limit for fisher and otter shall be in accordance with the season limits specified in Fis 303.014303.02(c) and Fis 303.05(e)303.04(c).

(k) Nuisance bobcat shall only be captured in live traps and released unharmed.

(l) The wildlife control operator may relocate and release wildlife only after the wildlife control operator has obtained written permission of the landowner where the wildlife is to be released.

(m) Wildlife control operators may release wildlife on state owned or managed lands for which they hold a valid trapping permit issued pursuant to Fis 902.03303.13.

Readopt with amendment Fis 308.04, effective 6-25-05 (Doc # 8385), to read as follows:

Fis 308.04 Level I Wildlife Control Operator.

(a) Any licensed trapper who holds a level I wildlife control operators license may trap nuisance animals outside the regular trapping seasons.

(b) Level I wildlife control operator licensees may only charge for services for trapping furbearers, woodchucks, coyote, opossums, and porcupines but shall not charge for services for trapping other nuisance wildlife.

(c) Level I wildlife control operators may keep and sell the hide of any furbearer currently permitted under the trapping license.

(d) Level I wildlife control operator shall report as follows:

(1) Report all furbearing animals killed during the open season for trapping wildlife on their trapping report as specified in Fis 303.4008; and

- (2) Report all nuisance furbearing animals killed outside the open trapping season on a wildlife control operator report as specified in Fis 308.07(c).
- (e) The license fee shall be \$10.00.

Readopt with amendment Fis 308.05 effective 6-25-05 #8385, to read as follows:

Fis 308.05 Level II Wildlife Control Operator.

(a) Applicants for a level II wildlife control operators license shall have completed a 6-hour workshop, or be certified by the National Wildlife Control Operators Association (NWCOA) or have held a previous level II wildlife control operators license.

(b) A workshop shall include the following topics:

- (1) Laws and rules;
- (2) Wildlife biology and ecology;
- (3) Best management practices;
- (4) Exclusionary methods, to include training on devices such as repellants, one-way doors, habitat modification and live traps;
- (5) Consideration of humane issues of wildlife;
- (6) Site evaluation;
- (7) Non-lethal or lethal resolutions to wildlife problems;
- (8) Techniques to prevent reoccurrence of the problem;
- (9) Capture, transport and handling of wildlife;
- (10) Euthanasia;
- (11) Landowner relations; and
- (12) Disease, hazards and risks.

(c) The level II wildlife control operators may utilize persons employed by them, and under their supervision to assist in carrying out their business.

(d) The wildlife control operator shall not use assistants who do not have the ability, knowledge and training to capably perform the tasks assigned to them.

(e) Each assistant shall carry a copy of their supervisor's level II wildlife control operator license.

(f) Level II wildlife control operators shall report ~~all nuisance furbearing animals killed~~ **the following** on a wildlife control operator report as specified in Fis 308.07(c):

**(1) All nuisance furbearing animals killed;**

**(2) For all bats that are excluded, the following information shall be reported:**

- a. Date of exclusion;**
- b. Species of bat excluded;**
- c. Estimated number of bats in the colony;**
- d. Type of structure bats were excluded from; and**
- e. Town where exclusion was done.**

(g) In addition to (f), a level II wildlife control operator who also holds a regular trapping license for the purpose of trapping furbearers during the regular trapping seasons shall report all furbearing animals taken during the open season for trapping on the annual trappers report as described in Fis 303.40**08**.

(h) The level II license fee shall be:

- (1) \$100.00 for residents; and
- (2) \$300.00 for nonresidents.

Readopt Fis 308.06, effective 6-25-05 (Doc # 8385), to read as follows:

Fis 308.06 Reports.

(a) Report information required in Fis 308.04(d)(2) and Fis 308.05(f) shall be submitted for the period June 1 through May 31 the previous year.

(b) Wildlife control operators shall submit the wildlife control operator report no later than June 30.

(c) Any licensee failing to report shall be refused a license until the complete information has been filed.

Readopt with amendment Fis 308.07, effective 6-25-05 (Doc #8385), as amended effective 5-28-08 (Doc #9163), to read as follows:

Fis 308.07 Wildlife ~~Operator~~ Control **Operator** Forms.

(a) A person requesting a wildlife control operator's license shall provide:

- (1) Name and address;
- (2) Date of birth;
- (3) Height and weight;
- (4) Telephone number;
- (5) Business name and address, if operating a business;
- (6) Level of license;
- (7) A current NH trapping license number, if applying for a level I license;
- (8) Proof of completion of a trapper education course if the applicant does not possess a trapping license and the applicant is applying for a level II license;
- (9) Previous level II wildlife control operator's license or proof, as specified in (b) below, that the requirements of Fis 308.05(b) have been met if the applicant is applying for a level II license;
- (10) If the applicant wishes to use snares, proof of completion of a snaring workshop as required in Fis 308.03(b);
- (11) An indication as to whether the licensee would like his or her name and contact information provided on a list of wildlife control operators provided by the department; and
- (12) Signature of the applicant subject to the penalties for making unsworn false statements under RSA 641:3.

(b) Proof that the requirements of Fis 308.05(b) have been met means a certificate or letter from NWCOA or certificate or letter from NH, Massachusetts, Connecticut, or any other state or province or organization conducting a similar workshop stating that the individual has completed the workshop.

(c) The wildlife control operator annual report shall include:

- (1) The licensee's name and address;
- (2) The level of license and license number held;
- (3) The time period covered by report;
- (4) The number of nuisance furbearing animals by species killed in each town and wildlife management unit that year;

**(5) For all bats that are excluded, the following information shall be reported:**

**(a) Date of exclusion;**

- (b) **Species of bat excluded;**
- (c) **Estimated number of bats in the colony;**
- (d) **Type of structure bats were excluded from; and**
- (e) **Town where exclusion was done; and**

(56) Licensee's signature subject to the penalties for making unsworn false statements under RSA 641:3.

Amend Fis 309.01(b), effective 6-5-10 (Doc #9720-A), cited and to read as follows:

Fis 309.01 Chronic Wasting Disease (CWD).

(b) For the purpose of this section, the following definitions shall apply:

- (1) "Cervid" means any member of the family Cervidae;
- (2) "CWD positive jurisdiction" means those US states or Canadian provinces in which chronic wasting disease has been found in the wild or captive cervids, **except New York State**.

Readopt with amendment Fis 1101.08, effective 1-1-11 (Doc #9800-B), to read as follows:

Fis 1101.08 Permanent Disabled Crossbow Permit.

(a) Applicants for a permanent disabled crossbow permit as provided in RSA 207:10-c shall submit an application on which the top portion is completed by the applicant and the lower portion has been completed by the applicants physician. The definition of physician for this purpose shall include nurse practitioners licensed in New Hampshire.

(b) The applicant shall provide, in addition to the information required by RSA 214:8, the applicant's:

- (1) Date of birth;
- (2) Hair color;
- (3) Weight and height;
- (4) Mailing address;
- (5) Telephone number; and
- (6) The signature of the applicant signed subject to penalties for making false statements under RSA 641:3.

(c) The physician shall provide:

- (1) Physician's name, address and telephone number;
- (2) A description of the permanent physical disability;
- (3) An indication of how the permanent physical disability prohibits the applicant from using a conventional or compound bow; and
- (4) Physician's signature and date.

**(d) Persons holding a permanent disabled crossbow permit shall not use longbows, recurve bows or compound bows while hunting game species in New Hampshire.**

Readopt with amendment Fis 1102.12, effective 9-28-04 (Doc #8183), as amended effective 6-5-10 (Doc #9720-A and Doc #9720-B), to read as follows:

Fis 1102.12 Use of Dogs to Take Bear.

(a) Applicants for a permit to use dogs to take bear shall provide on a form provided by the department:

- (1) Name and address of applicant;
- (2) New Hampshire hunting license number;
- (3) Telephone number of applicant;
- (4) Date of birth of applicant;
- (5) Date of permit;
- (6) The individual frequency of each radio collar to be utilized while taking bear if applicable; and
- (7) Signature of applicant, signed subject to the penalties for making unsworn false statements under RSA 641:3.

(b) Prior to hunting, the permittee shall distribute the copies of the permit as follows:

- (1) The white copy shall be retained on the permittee while hunting bear with dogs; and
- (2) The canary copy shall be submitted to the fish and game department.

(c) The permit to take bear with dogs shall become effective when the canary copy is presented in hand at fish and game headquarters or regional office, ~~or~~ submitted to a conservation officer, **or postmarked and mailed in an envelope addressed to fish and game headquarters prior to the taking a bear.**

(d) A permit to take bear with dogs shall be valid for a single permittee only and have only the permittee's name entered on the permit.

(e) A permit to take bear with hounds shall expire at the end of the dog hunting season for bear as specified in Fis 301.0306(d), in the year for which the permit was issued.

PART Fis 1401 **AMPHIBIANS AND REPTILES**

Adopt Fis 1401.01 and Fis 1401.02 to read as follows:

Fis 1401.01 General Provisions for Amphibians and Reptiles.

(a) Importation, possession, release and sale of live amphibians and reptiles shall be in accordance with Fis 803, Fis 804, Fis 805 and Fis 811.

(b) The taking of amphibians and reptiles shall be only by hand capture, including the use of hand held nets.

(b) The taking of amphibians and reptiles shall be as specified in Fis 1401.02 and Fis 1401.03.

(c) Amphibians and reptiles native to New Hampshire, including parts there of, specified in Fis 1401.02 and Fis 1401.03 shall not be exported from the state.

Fis 1401.02 Amphibians.

(a) The daily and season bag limits for the taking of amphibians listed below in Table 1400.1 shall be 5 amphibians of each species:

Table 1400.1 Amphibians

|                               |                                  |
|-------------------------------|----------------------------------|
| American toad                 | <i>Bufo americanus</i>           |
| Gray treefrog                 | <i>Hyla versicolor</i>           |
| Spring peeper                 | <i>Pseudacris crucifer</i>       |
| American bullfrog             | <i>Rana catesbeiana</i>          |
| Green frog                    | <i>Rana clamitans</i>            |
| Pickerel frog                 | <i>Rana palustris</i>            |
| Mink frog                     | <i>Rana septentrionalis</i>      |
| Wood frog                     | <i>Rana sylvatica</i>            |
| Spotted salamander            | <i>Ambystoma maculatum</i>       |
| Northern two-lined salamander | <i>Eurycea bislineata</i>        |
| Northern dusky salamander     | <i>Desmognathus fuscus</i>       |
| Eastern red-backed salamander | <i>Plethodon cinereus</i>        |
| Red-spotted newt              | <i>Notophthalmus viridescens</i> |

Readopt with amendment Fis 1401.01, effective 6-5-07 (Doc #8893), and renumber as Fis 1401.03, to read as follows:

Fis 1401.01—**03** Reptiles.

(a) No person shall take or possess a spotted turtle (*Clemmys guttata*), Blanding's turtle (*Emydoidea blandingii*), wood turtle (*Glyptemys insculpta*), Eastern box turtle (*Terrapene carolina carolina*), black racer (*Coluber constrictor*) or any egg or part thereof.

(b) ~~Importation, possession and release of reptiles shall be in accordance with Fis 800.~~ **The taking of reptiles, cited below in Table 1400.2, shall be taken only as specified in this section:**

**Table 1400.2 Reptiles**

|                            |                                           |
|----------------------------|-------------------------------------------|
| <b>Musk turtle</b>         | <i>Sternotherus odoratus</i>              |
| <b>Painted turtle</b>      | <i>Chrysemys picta</i>                    |
| <b>Snapping turtle</b>     | <i>Chelydra serpentina</i>                |
| <b>Ring-necked snake</b>   | <i>Diadophis punctatus</i>                |
| <b>Eastern milksnake</b>   | <i>Lampropeltis triangulum triangulum</i> |
| <b>Northern watersnake</b> | <i>Nerodia sipedon</i>                    |
| <b>Brown snake</b>         | <i>Storeria dekayi</i>                    |
| <b>Red-bellied snake</b>   | <i>Storeria occipitomaculata</i>          |
| <b>Garter snake</b>        | <i>Thamnophis sirtalis</i>                |

(b) **The daily and season bag limit for taking of reptiles specified in Table 1400.2 shall be 2 reptiles of each species.**

(c) No person shall take any species of indigenous turtle from May 15 to July 15.

(d) **The taking of snapping turtles (*Chelydra serpentina*) shall only be allowed of snapping turtles less than 6 inches or 12 to 15 inches in length as measured from the front to rear along the top of the carapace.**

APPENDIX

| <b>Rule(s)</b>       | <b>State Statute (RSA)</b>                           | <b>Federal Statute</b> | <b>Federal Regulation</b> |
|----------------------|------------------------------------------------------|------------------------|---------------------------|
| Fis 301.02           | RSA 208:1-a, 208:2,<br>208:22, 208:22-a,<br>209:12-a |                        |                           |
| Fis 301.03           | RSA 208:2, I, 208:5,<br>208:5-a                      |                        |                           |
| Fis 301.031          | RSA 208:2 I, 208:5-b                                 |                        |                           |
| Fis 301.032          | RSA 206:23-c, 207:10-c                               |                        |                           |
| Fis 301.041          | RSA 207:10-c                                         |                        |                           |
| Fis 301.06           | RSA 207:3-d, 208:22,<br>208:24                       |                        |                           |
| Fis 301.07           | RSA 208:1-a                                          |                        |                           |
| Fis 301.09           | RSA 208:1-a                                          |                        |                           |
| Fis 302.01           | RSA 209:12-a                                         |                        |                           |
| Fis 303.02           | RSA 206:10; RSA<br>210:23                            |                        |                           |
| Fis 303.03           | RSA 207:56                                           |                        |                           |
| Fis 303.12           | RSA 210:23                                           |                        |                           |
| Fis 307.01- 307.04   | RSA 207:3-d, 208:1-e,<br>208:2                       |                        |                           |
| Fis 308.01-308.07    | RSA 210:24-b                                         |                        |                           |
| Fis 309.01(b)        | RSA 206:10, I                                        |                        |                           |
| Fis 1101.08          | RSA 207:10-c                                         |                        |                           |
| Fis 1102.12          | RSA 208:22                                           |                        |                           |
| Fis 1401.01- 1401.03 | RSA 212-B:4                                          |                        |                           |

Summary of Post-listing Trapping-related Incidental Take of Canada Lynx in Montana.

| Date       | Cause of Take                                                                                       | Mortality? | Injury?                       | Covered by CITES BiOp?                       | Source   | Notes                                                                                                                                                                                                                            |
|------------|-----------------------------------------------------------------------------------------------------|------------|-------------------------------|----------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fall 2000  | "...a trapper caught a lynx and let it go..."                                                       | No (?)     | Unknown                       | No – preceded it.                            | CITES BO | Unclear if this was a bobcat set.                                                                                                                                                                                                |
| 2000-2001  | Lynx killed in a conibear trap legally set for a wolverine.                                         | Yes        |                               | No – preceded it. Also was not a bobcat set. | CITES BO |                                                                                                                                                                                                                                  |
| 2000-2001  | Female caught by a toe in a leghold (size 0 or 00) set for a marten.                                | No         | Yes                           | No – preceded it. Also was not a bobcat set. | CITES BO | May be one J. Squires told me about. He mentioned these trap sizes, says the lynx was emaciated and he thought they rehabilitated it and released it after 1 or more weeks in captivity.                                         |
| 1/1/2001   | Radio-collared yearling female found dead 30 m from a bobcat set (#4 double-spring foothold trap).  | Yes        | Yes – swollen lacerated foot. | No – preceded it.                            | CITES BO | Based on emails & phone calls between L. Nordstrom and B. Giddings. Originally reported 1/23/ 2001 as capture date. USFS reported to State on 1/1/2001; trapper said he caught and released lynx on 1/16/2001 from a bobcat set. |
| 2004-2005  | Lynx captured and released unharmed by a bobcat tapper.                                             | No         | No                            | Yes                                          | MTFWP    | 8/30/2006 letter from Giddings to Nordstrom. Middle Fork of the Flathead.                                                                                                                                                        |
| 12/12/2005 | Female caught in a foothold while trapping for bobcat; released uninjured.                          | No         | No                            | Yes                                          | MTFWP    | 8/30/2006 letter from Giddings to Nordstrom. Brimstone Creek (near Eureka).                                                                                                                                                      |
| Dec. 2005  | Lynx caught in a foothold while trapping for bobcats; released uninjured.                           | No         | No                            | Yes                                          | MTFWP    | 8/30/2006 letter from Giddings to Nordstrom. Fitzsimmons Creek (near Kalispell).                                                                                                                                                 |
| 1/2/2006   | Lynx captured and killed in a snare set for wolverine.                                              | Yes        |                               | No – not a legal bobcat set.                 | MTFWP    | 8/30/2006 letter from Giddings to Nordstrom. Ten lakes area (near Kalispell). Carcass recovered by FWP.                                                                                                                          |
| 12/24/2006 | Large male captured in a foothold trap while trapping for bobcats; released uninjured.              | No         | No                            | Yes                                          | MTFWP    | 9/20/2007 letter from Giddings to Sartorius. Uhler Creek (near Seeley Lake).                                                                                                                                                     |
| Feb. 2007  | Radio-collared male found dead in a Victor #1 foothold trap that "...may have been set for marten." | Yes        |                               | No – probably a marten set                   | MTFWP    | 9/20/2007 letter from Giddings to Sartorius. Fawn Creek (near Squires Seeley Lake study area).                                                                                                                                   |

(Over)

Notes:

1. This table contains all records of trapping-related incidental take of lynx in Montana I'm aware of. In 2000-2001, two other lynx were poached by lion hunters.
2. 3/24/2000 – Contiguous Lynx DPS listed as threatened.
3. 9/24/2001 – Intra-agency Consultation/BiOp providing ITP to Division of Management Authority (DMA) for 2 lynx killed and 2 lynx injured annually, DPS-wide, for its CITES Furbearer Export Program. This take allowance was specific to lynx incidentally trapped in legal bobcat sets. 2007 – DMA requested re-initiation because it's BA assumed constant bobcat trapping effort over the 10-year life of the ITP, and it had seen a big increase in trapping effort/numbers of trappers/ and numbers of bobcat trapped. Service concluded unnecessary to increase take because there was no concomitant increase in the number of lynx incidentally trapped. This agreement expired 9/25/2011, but was extended indefinitely by the Service on 4/11/2012.
4. 2000 – 200? – Service (Nordstrom et. al) worked with Maine, Minnesota, Montana, Wyoming, Idaho, Washington to develop a 4(d) rule to cover trapping-related IT DPS-wide – but the state and federal solicitors could never reach agreement, so it was never completed.
5. The 1/2/2006 and Feb. 2007 incidences in the table above represent take not covered by the CITES BiOp or any other mechanism. MTFWP made the Service aware of them via letters from Brian Giddings to this office in Aug. 2006 and Sept. 2007.
6. Brian Giddings returned my call on 9/19/2012 and indicated that the State developed its special marten, fisher, bobcat, and wolverine regs in 2007 – 2008 to reduce the likelihood of lynx IT. These regs were implemented in 2008 – 2009. No instances of lynx IT have been reported since the regs were implemented.
7. State of Maine and the Service there are “close” to finalizing a HCP/ITP for the State's trapping program. Minnesota also working on same.

Summary of Post-listing Trapping-related Incidental Take of Canada Lynx in Montana.

| Date       | Cause of Take                                                                                       | Mortality? | Injury?                       | Covered by CITES BiOp?                       | Source   | Notes                                                                                                                                                                                                                            |
|------------|-----------------------------------------------------------------------------------------------------|------------|-------------------------------|----------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fall 2000  | "...a trapper caught a lynx and let it go..."                                                       | No (?)     | Unknown                       | No – preceded it.                            | CITES BO | Unclear if this was a bobcat set.                                                                                                                                                                                                |
| 2000-2001  | Lynx killed in a conibear trap legally set for a wolverine.                                         | Yes        |                               | No – preceded it. Also was not a bobcat set. | CITES BO |                                                                                                                                                                                                                                  |
| 2000-2001  | Female caught by a toe in a leghold (size 0 or 00) set for a marten.                                | No         | Yes                           | No – preceded it. Also was not a bobcat set. | CITES BO | May be one J. Squires told me about. He mentioned these trap sizes, says the lynx was emaciated and he thought they rehabilitated it and released it after 1 or more weeks in captivity.                                         |
| 1/1/2001   | Radio-collared yearling female found dead 30 m from a bobcat set (#4 double-spring foothold trap).  | Yes        | Yes – swollen lacerated foot. | No – preceded it.                            | CITES BO | Based on emails & phone calls between L. Nordstrom and B. Giddings. Originally reported 1/23/ 2001 as capture date. USFS reported to State on 1/1/2001; trapper said he caught and released lynx on 1/16/2001 from a bobcat set. |
| 2004-2005  | Lynx captured and released unharmed by a bobcat tapper.                                             | No         | No                            | Yes                                          | MTFWP    | 8/30/2006 letter from B. Giddings to L. Nordstrom. Middle Fork of the Flathead.                                                                                                                                                  |
| 12/12/2005 | Female caught in a foothold while trapping for bobcat; released uninjured.                          | No         | No                            | Yes                                          | MTFWP    | 8/30/2006 letter from Giddings to Nordstrom. Brimstone Creek (near Eureka).                                                                                                                                                      |
| Dec. 2005  | Lynx caught in a foothold while trapping for bobcats; released uninjured.                           | No         | No                            | Yes                                          | MTFWP    | 8/30/2006 letter from Giddings to Nordstrom. Fitzsimmons Creek (near Kalispell).                                                                                                                                                 |
| 1/2/2006   | Lynx captured and killed in a snare set for wolverine.                                              | Yes        |                               | No – not a legal bobcat set.                 | MTFWP    | 8/30/2006 letter from Giddings to Nordstrom. Ten lakes area (near Kalispell). Carcass recovered by FWP.                                                                                                                          |
| 12/24/2006 | Large male captured in a foothold trap while trapping for bobcats; released uninjured.              | No         | No                            | Yes                                          | MTFWP    | 9/20/2007 letter from B. Giddings to S. Sartorius. Uhler Creek (near Seeley Lake).                                                                                                                                               |
| Feb. 2007  | Radio-collared male found dead in a Victor #1 foothold trap that "...may have been set for marten." | Yes        |                               | No – probably a marten set                   | MTFWP    | 9/20/2007 letter from Giddings to Sartorius. Fawn Creek (near Squires Seeley Lake study area).                                                                                                                                   |

(Over)

Notes:

1. This table contains all records the Service has of trapping-related incidental take of lynx in Montana 2000-2013. In 2000-2001, two other lynx were poached by lion hunters (CITES BA), and the Sept. 20, 2007 letter from MTFWP to USFWS MTFO noted that two other lynx were shot during winter in the Seeley Lake area, and another lynx was found dead near Potomac, MT, apparently due to predation.
2. 3/24/2000 – Contiguous Lynx DPS listed as threatened.
3. 9/24/2001 – Intra-agency Consultation/BiOp providing ITP to Division of Management Authority (DMA) for 2 lynx killed and 2 lynx injured annually, DPS-wide, for its CITES Furbearer Export Program. This take allowance was specific to lynx incidentally trapped in legal bobcat sets. 2007 – DMA requested re-initiation because it's BA assumed constant bobcat trapping effort over the 10-year life of the ITP, and it had seen a big increase in trapping effort/numbers of trappers/ and numbers of bobcat trapped. Service concluded unnecessary to increase take because there was no concomitant increase in the number of lynx incidentally trapped. This agreement expired 9/25/2011, but was extended indefinitely by the Service on 4/11/2012.
4. 2000 – 200? – Service (L. Nordstrom et al.) worked with Maine, Minnesota, Montana, Wyoming, Idaho, Washington to develop a 4(d) rule to cover trapping-related IT DPS-wide – but the state and federal solicitors could never reach agreement, so it was never completed.
5. The 1/2/2006 and Feb. 2007 incidences in the table above represent take not covered by the CITES BiOp or any other mechanism. MTFWP made the Service aware of them via letters to this (MTFO) office in Aug. 2006 and Sept. 2007.
6. MTFWP (B. Giddings) returned MTFO ( J. Zelenak) call on 9/19/2012 and indicated that the State developed its special marten, fisher, bobcat, and wolverine regs in 2007-2008 to reduce the likelihood of lynx IT. These regs were implemented during the 2008-2009 trapping season. After the regs were implemented, no incidences of lynx IT were reported until the 12/17/2012 IT summarized below.
7. The State of Maine and the Service there are “close” to finalizing a HCP/ITP for the State’s trapping program. Minnesota also working on same.

**Addendum 12/2/2013:** From B. Giddings, MTFWP, 1/7/2013 email to C. Horton, FWS-DMA re: Incidental capture of lynx in MT:

“A trapper reported on 12/17/12 that he had released a lynx captured in a bobcat set. It was released unharmed and bore an ear tag from previous lynx research efforts in northwestern Montana.”

From 2/19/2013 email from B. Giddings, MTFWP to J. Zelenak, MTFO, on Zelenak’s request for additional information:

“... this incidental lynx capture...occurred west of Lake Koocanusa in the Steep Creek drainage at MM 12 (approximately T34N, R29W, Sec 7) but there was no information on elevation or habitat type or slope. The trapper did not get an ear tag # or determine sex. Our biologist believed it was a research animal from the Squires study, but (Squires) was not notified. Not sure what type of bobcat set, again our biologist did not have that information. Not much more here, but hope it helps some.”

This is the first reported lynx incidental capture in MT since 2007, and the first since MTFWP implemented special trapping regulations in 2008-2009. It is covered by the CITES ITP.

Summary of Post-listing Trapping-related Incidental Take of Canada Lynx in Montana.

| Date       | Cause of Take                                                                                       | Mortality? | Injury?                       | Covered by CITES BiOp?                       | Source   | Notes                                                                                                                                                                                                                            |
|------------|-----------------------------------------------------------------------------------------------------|------------|-------------------------------|----------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fall 2000  | "...a trapper caught a lynx and let it go..."                                                       | No (?)     | Unknown                       | No – preceded it.                            | CITES BO | Unclear if this was a bobcat set.                                                                                                                                                                                                |
| 2000-2001  | Lynx killed in a conibear trap legally set for a wolverine.                                         | Yes        |                               | No – preceded it. Also was not a bobcat set. | CITES BO |                                                                                                                                                                                                                                  |
| 2000-2001  | Female caught by a toe in a leghold (size 0 or 00) set for a marten.                                | No         | Yes                           | No – preceded it. Also was not a bobcat set. | CITES BO | May be one J. Squires told me about. He mentioned these trap sizes, says the lynx was emaciated and he thought they rehabilitated it and released it after 1 or more weeks in captivity.                                         |
| 1/1/2001   | Radio-collared yearling female found dead 30 m from a bobcat set (#4 double-spring foothold trap).  | Yes        | Yes – swollen lacerated foot. | No – preceded it.                            | CITES BO | Based on emails & phone calls between L. Nordstrom and B. Giddings. Originally reported 1/23/ 2001 as capture date. USFS reported to State on 1/1/2001; trapper said he caught and released lynx on 1/16/2001 from a bobcat set. |
| 2004-2005  | Lynx captured and released unharmed by a bobcat tapper.                                             | No         | No                            | Yes                                          | MTFWP    | 8/30/2006 letter from B. Giddings to L. Nordstrom. Middle Fork of the Flathead.                                                                                                                                                  |
| 12/12/2005 | Female caught in a foothold while trapping for bobcat; released uninjured.                          | No         | No                            | Yes                                          | MTFWP    | 8/30/2006 letter from Giddings to Nordstrom. Brimstone Creek (near Eureka).                                                                                                                                                      |
| Dec. 2005  | Lynx caught in a foothold while trapping for bobcats; released uninjured.                           | No         | No                            | Yes                                          | MTFWP    | 8/30/2006 letter from Giddings to Nordstrom. Fitzsimmons Creek (near Kalispell).                                                                                                                                                 |
| 1/2/2006   | Lynx captured and killed in a snare set for wolverine.                                              | Yes        |                               | No – not a legal bobcat set.                 | MTFWP    | 8/30/2006 letter from Giddings to Nordstrom. Ten lakes area (near Kalispell). Carcass recovered by FWP.                                                                                                                          |
| 12/24/2006 | Large male captured in a foothold trap while trapping for bobcats; released uninjured.              | No         | No                            | Yes                                          | MTFWP    | 9/20/2007 letter from B. Giddings to S. Sartorius. Uhler Creek (near Seeley Lake).                                                                                                                                               |
| Feb. 2007  | Radio-collared male found dead in a Victor #1 foothold trap that "...may have been set for marten." | Yes        |                               | No – probably a marten set                   | MTFWP    | 9/20/2007 letter from Giddings to Sartorius. Fawn Creek (near Squires Seeley Lake study area).                                                                                                                                   |

(Over)

## Notes:

1. This table contains all records the Service has of trapping-related incidental take of lynx in Montana 2000-2013. In 2000-2001, two other lynx were poached by lion hunters (CITES BA), and the Sept. 20, 2007 letter from MTFWP to USFWS MTFO noted that two other lynx were shot during winter in the Seeley Lake area, and another lynx was found dead near Potomac, MT, apparently due to predation.
2. 3/24/2000 – Contiguous Lynx DPS listed as threatened.
3. 9/24/2001 – Intra-agency Consultation/BiOp providing ITP to Division of Management Authority (DMA) for 2 lynx killed and 2 lynx injured annually, DPS-wide, for its CITES Furbearer Export Program. This take allowance was specific to lynx incidentally trapped in legal bobcat sets. 2007 – DMA requested re-initiation because it's BA assumed constant bobcat trapping effort over the 10-year life of the ITP, and it had seen a big increase in trapping effort/numbers of trappers/ and numbers of bobcat trapped. Service concluded unnecessary to increase take because there was no concomitant increase in the number of lynx incidentally trapped. This agreement expired 9/25/2011, but was extended indefinitely by the Service on 4/11/2012.
4. 2000 – 200? – Service (L. Nordstrom et al.) worked with Maine, Minnesota, Montana, Wyoming, Idaho, Washington to develop a 4(d) rule to cover trapping-related IT DPS-wide – but the state and federal solicitors could never reach agreement, so it was never completed.
5. The 1/2/2006 and Feb. 2007 incidences in the table above represent take not covered by the CITES BiOp or any other mechanism. MTFWP made the Service aware of them via letters from to this (MTFO) office in Aug. 2006 and Sept. 2007.
6. MTFWP (B. Giddings) returned MTFO ( J. Zelenak) call on 9/19/2012 and indicated that the State developed its special marten, fisher, bobcat, and wolverine regs in 2007-2008 to reduce the likelihood of lynx IT. These regs were implemented during the 2008-2009 trapping season. After the regs were implemented, no incidences of lynx IT were reported until the 12/17/2012 IT summarized below.
7. The State of Maine and the Service there are “close” to finalizing a HCP/ITP for the State's trapping program. Minnesota also working on same.

**Addendum 12/2/2013:** From B. Giddings, MTFWP, 1/7/2013 email to C. Horton, FWS-DMA re: Incidental capture of lynx in MT:

“A trapper reported on 12/17/12 that he had released a lynx captured in a bobcat set. It was released unharmed and bore an ear tag from previous lynx research efforts in northwestern Montana.”

From 2/19/2013 email from B. Giddings, MTFWP to J. Zelenak, MTFO, on Zelenak's request for additional information:

“... this incidental lynx capture...occurred west of Lake Koocanusa in the Steep Creek drainage at MM 12 (approximately T34N, R29W, Sec 7) but there was no information on elevation or habitat type or slope. The trapper did not get an ear tag # or determine sex. Our biologist believed it was a research animal from the Squires study, but (Squires) was not notified. Not sure what type of bobcat set, again our biologist did not have that information. Not much more here, but hope it helps some.”

This is the first reported lynx incidental capture in MT since 2007, and the first since MTFWP implemented special trapping regulations in 2008-2009. It is covered by the CITES ITP.



**DEPARTMENT OF THE INTERIOR**  
**TASKING PROFILE**

**ACCN #:** ESO-00054994    **Status:** Closed    **Fiscal Year:** 2014  
**Document Date:** 04/18/2014    **Received Date:** 04/22/2014    **Due Date:**    **Action Office:** FWS    **Signature Level:** AA    **Doc Source:** ENV

**To (Recipient):** Jewell, Sally  
**From (Author):** Horning, John

Executive Director  
WildEarth Guardians  
Santa Fe, NM 87504

**Subject Text:** Re: Amended Notice of Intent to sue for ESA violations relating to State Authorized Trapping in habitat for Canada Lynx.

**Req. Surnames:**

**Mail Carrier:**

**Mail Track #:**

**Cross Ref:**

**Copies To:** SIO-OES

**Status Tracking:**

**Correspondence Specialist and Phone:** SIO-OES Tim Feeney/202-208-6701

**Closed**  
**Comments:**

**Signed:**



643152

RECEIVED

2014 APR 22 PM 3:27

OFFICE OF THE  
EXT...

Via Certified Mail, Return Receipt Requested

April 18, 2014

C.L. "Butch" Otter  
Governor of Idaho  
Office of the Governor  
700 West Jefferson, Suite 228  
Boise, Idaho 83720

Virgil Moore  
Director  
Idaho Department of Fish and Game  
P.O. Box 25  
Boise, Idaho 83707

Lawrence G. Wasden  
Attorney General  
Office of the Attorney General  
700 W. Jefferson Street, Suite 210  
P.O. Box 83720  
Boise, Idaho 83720

Brad Corkill  
Commissioner  
Idaho Fish and Game Commission  
14701 S. Shady Lane  
Cataldo, Idaho 83810

Fred Trevey  
Commissioner  
Idaho Fish and Game Commission  
6626 Cougar Ridge Road  
Lewiston, Idaho 83501

Bob Barowsky  
Commissioner  
Idaho Fish and Game Commission  
P.O. Box 79  
Fruitland, Idaho 83619

Mark Doerr  
Commissioner  
Idaho Fish and Game Commission  
3513 E. 3985 N.  
Kimberly, Idaho 83341

Randy Budge  
Commissioner  
Idaho Fish and Game Commission  
201 E. Center  
Pocatello, Idaho 83201

Kenny Anderson  
Commissioner  
Idaho Fish and Game Commission  
4649 E. 250 N.  
Rigby, Idaho 83442

Will Naillon  
Commissioner  
Idaho Fish and Game Commission  
HC 63 Box 1812  
987 Foothills Road  
Challis, Idaho 83226

Re: Amended Notice of Intent to Sue For Continued Violations of the Endangered Species  
Act Related to State Authorized Trapping in Habitat for Canada Lynx

1536 Wynkoop Street, Ste. 302 Denver, CO 80202 303-573-4898 www.wildearthguardians.org

SANTA FE DENVER PHOENIX

Dear Sirs:

On February 7, 2012, WildEarth Guardians wrote Governor Otter and Director Moore to notify them of our intent, pursuant to the citizens suit provision of the federal Endangered Species Act (“ESA”), 16 U.S.C. § 1540(g), to sue officials of the State of Idaho for allowing trapping in habitat for Canada lynx (*Lynx canadensis*), which is listed as threatened with extinction under the ESA. The notice states that allowing trapping in habitat for lynx has caused individual lynx to be killed, harmed, or otherwise “take[n]” under the ESA, which is illegal unless such actions are specifically authorized by the U.S. Fish and Wildlife Service (“Service”). 16 U.S.C. § 1538(a)(1)(B). No entity from the State of Idaho responded to our 2012 notice.

Since our 2012 notice, as detailed below, even more Canada lynx have been killed, harmed, or otherwise taken under the ESA in Idaho in the context of trapping authorized by officials of the State of Idaho. Accordingly, we hereby update and amend our 2012 notice to detail additional take we are aware of. We iterate that we intend to sue officials from the State of Idaho that are responsible for authorizing trapping in habitat for lynx that causes the illegal take of the species, under the ESA, absent specific authorization from the Service.

1. Habitat for Lynx in Idaho.

Lynx are highly adapted to survive in deep snows of the boreal forests in the contiguous United States, depend on abundant snow and a variety of high elevation habitats for hunting and denning, and prey primarily on snowshoe hare. Ripple et al. (2011). According to the Service, the majority of lynx in the contiguous forty-eight states live in the Rocky Mountains and Cascade Range, including Idaho. 65 Fed. Reg. 16052, 16057 (March 24, 2000). In Idaho, lynx find habitat in conifer forests comprised of Douglas fir and western spruce. *Id.* In 2004, Miller and Rust reported:

In Idaho lynx are predicted to occur in montane and subalpine coniferous forest habitats (at generally >4,000 ft. elevation) as far south in the west as the northern Salmon River and Lemhi mountains and east and south on the Yellowstone Highlands and Caribou Range (McKelvey 2000; Wisdom et al. 2000). Several lynx occurrences are known from the Coeur d’Alene River, St. Joe River, and St. Maries River basins (Idaho Conservation Data Center 2003). Additional references on the occurrence, ecology, and conservation of lynx in Idaho include Clark et al. (1989); Idaho Conservation Effort (1998); Koehler and Aubry (1994); Koehler and Hornocker (1979); Lewis and Wenger (1998); Rust (1946); and Terra-Berns et al. (2000). Gaines et al. (2000) and Carrol et al. (2001) provide recent insight to issues concerning lynx habitat conservation planning (p. 1).

Miller and Rust (2004).

In addition to lynx naturally occurring in habitat in Idaho, lynx recently re-introduced into Colorado (or their offspring) have been documented to migrate into and inhabit parts of Idaho. Devineau et al. (2010), Shenk (Undated).

Figure 1: Lynx Dispersal From Colorado into Idaho – Graphic from *Journal of Applied Ecology*

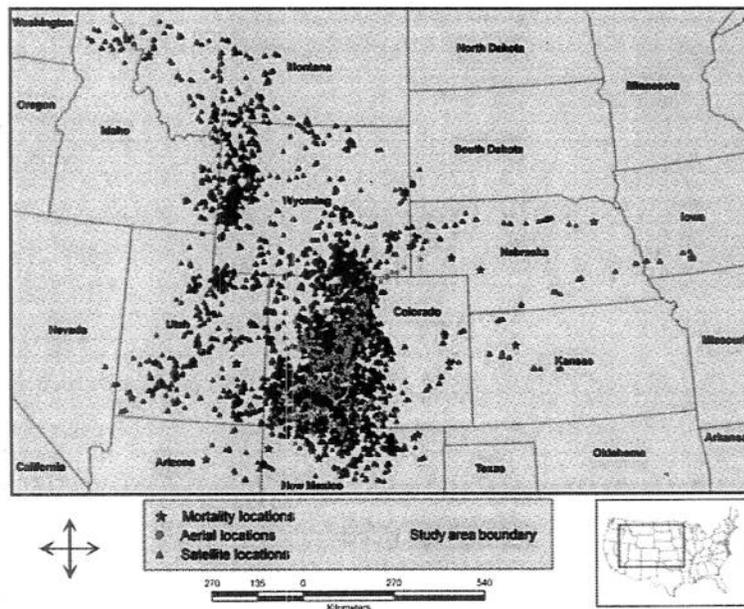


Fig. 1. Map of Colorado outlining the core reintroduction and primary post-release monitoring area, and documenting all post-release locations obtained by either satellite platform transmitter terminal or aerial very high frequency tracking for the 218 lynx reintroduced to Colorado from February 1999 to November 2007. All known mortality locations are shown as stars.

© 2010 The Authors. Journal compilation © 2010 British Ecological Society, *Journal of Applied Ecology*, 47, 524–531

We attach as Exhibit 1 a Feb. 21, 2007, Forest Service map showing occupied and unoccupied lynx habitat in the Northern Rockies Lynx Planning Area. The map confirms significant lynx habitat, and significant occupied lynx habitat, in the State of Idaho as of that date. We anticipate that at this time there is even more occupied lynx habitat in the State of Idaho.

## 2. Liability for Take under the ESA.

In 2000, the Service listed lynx as threatened with extinction under the ESA in part of its range. 65 Fed. Reg. at 16052 et seq. The Service noted that “[l]egal trapping activities for bobcat, coyote, wolverine, and other furbearers create a potential for incidental capture of lynx,” and that it is “concerned about the loss of lynx through legal or illegal trapping and shooting . . . .” 65 Fed. Reg. at 16077 & 16080. At the time it listed lynx under the ESA, the Service also extended the “take” prohibition in Section 9 of the ESA to lynx. 65 Fed. Reg. at 16085; see 50 C.F.R. § 17.40(k)(2). The Service noted that “[t]ake of wild lynx (including both purposeful and incidental)” would be “considered a violation of section 9 of the Act.” 65 Fed. Reg. at 16084.

Section 9 of the ESA makes it unlawful for any person to “take” an endangered species. 16 U.S.C. § 1538(a)(1)(B). To “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. *Id.* § 1532(19) (emphases added). “Take” includes direct as well as indirect harm, and need not be purposeful. *Babbitt v. Sweet Home Chapter of Cmty. for a Great Or.*, 515 U.S. 687, 704 (1995). Illegal “take” may be the result of an accident. *Nat’l Wildlife Fed’n v. Burlington N. R.R.*, 23 F.3d 1508, 1512 (9th Cir. 1994).

To “trap” lynx is to “take” it regardless of whether trapping results in actual injury or death. While “harm” flows from “an act which actually kills or injures wildlife,” a listed and protected species is “harassed” by any “intentional or negligent act or omission which creates the likelihood of injury . . . by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering.” 50 C.F.R. § 17.3. “‘Take’ is defined . . . in the broadest possible manner to include every conceivable way in which a person can ‘take’ or attempt to ‘take’ any fish or wildlife.” *Babbitt v. Sweet Home*, 515 U.S. at 704.

It is also unlawful for any person to “cause [an ESA violation] to be committed.” 16 U.S.C. § 1538(g). The term “person” includes “any officer, employee, agent, department, or instrumentality . . . of any State, municipality, or political subdivision of a State . . . [or] any State, municipality, or political subdivision of a State . . .” *Id.* § 1532(13).

Similarly, the ESA “not only prohibits the acts of those parties that directly exact the taking, but also bans those acts of a third party that bring about the acts exacting a taking. [A] governmental third party pursuant to whose authority an actor directly exacts a taking . . . may be deemed to have violated the provisions of the ESA.” *Strahan v. Coxe*, 127 F.3d 155, 163 (1st Cir. 1997) (holding that officials of the State of Massachusetts violated Section 9 of the ESA by issuing licenses and permits authorizing gillnet and lobster pot fishing, activities known to incidentally injure Northern right whales); see *Loggerhead Turtle v. Cnty. Council of Volusia Cnty.*, 148 F.3d 1231 (11th Cir. 1998) (holding that plaintiff had standing to prosecute its case against a county for listed sea turtles that were harmed by the private, artificial lights county regulations allowed); *Animal Prot. Inst. v. Holsten*, 541 F. Supp. 2d 1073, 1079 (D. Minn. 2008) (holding that officials in State of Minnesota are liable under Section 9 of the ESA for authorizing trapping that caused the incidental take of lynx).

### 3. Idaho Trapping Rules.

In the State of Idaho, it is illegal for anyone to “hunt, trap, or fish for or take any wild animal, bird, or fish of this state, without having first procured a license” from the State of Idaho. IDAHO CODE § 36-401. Under state administrative rules, the Department issues “permits” for trapping in controlled trapping units in the state. IDAHO ADMIN. CODE r. 13.01.16.150.01 (2014). The Department classifies lynx as a “fur-bearing” animal. *Id.* at 13.01.16.010.01.h. There is no open season for lynx. *Id.* at 13.01.16.750.01. However, trapping is allowed for animals such as beaver, muskrat, mink, marten, otter, wolves, and other species that inhabit the same habitat as lynx. See *Id.* at r. 13.01.16.400.01. Trapping is disallowed in certain areas of the state, but it is not generally disallowed in habitat for lynx. *Id.* at 13.01.16.650. Further, the State of Idaho allows a variety of traps – leg hold, conibear, and snares – within habitat for lynx. These kinds of traps cannot and do not discriminate between species. See Iossa et al. 2007. Indeed, the State of Idaho anticipates that its allowance of trapping for certain species in lynx habitat may in fact

result in trapping (and therefore “take”) of lynx: the Department will reimburse trappers \$10 for each lynx “caught accidentally and turned in.” IDAHO ADMIN. CODE r. 13.01.16.200.03.b.iv (2014).

4. Examples of Take of Lynx in Idaho.

As we noted in our original notice, in January 2012, a recreationist found a lynx in a foothold trap in the Salmon-Challis National Forest in Idaho. Within the same year, a trapper reported (and the state confirmed) that he killed a lynx incidentally while trapping bobcats in Boundary County. More recently, in January 2014, trappers reported catching a lynx in a trapline in the Cabinet Mountain range, which was again confirmed by the state. We anticipate that many more “take[s]” of lynx have occurred, and will continue to occur, in Idaho.

5. Conclusion.

As we noted in our original notice, the ESA provides that “any person may commence a civil suit on his own behalf to enjoin any person, including . . . any . . . governmental instrumentality or agency . . . who is alleged to be in violation of any provision of [the ESA]. 16 U.S.C. § 1540(g). A plaintiff can seek to enjoin both present activities that constitute and ongoing take and future activities that are reasonably likely to result in take. *See Burlington N. R.R.*, 23 F.3d at 1511.

As established above, officials of the State of Idaho have violated and continue to violate the ESA, by allowing trapping in habitat for Canada lynx, by allowing trappers to use non-selective traps and snares that have captured, harmed, and/or harassed, and are likely to again capture, harm, and/or harass lynx within the State of Idaho.

As we noted in our original notice, we would be pleased to meet and confer as to constructive solutions to this serious problem. Again, please contact us to discuss this issue and how we might work together to resolve it.

Sincerely,



John Horning  
Executive Director  
WildEarth Guardians  
516 Alto Street  
Santa Fe, New Mexico 87501

Bethany Cotton  
Wildlife Programs Director  
WildEarth Guardians  
516 Alto Street  
Santa Fe, New Mexico 87501

cc: S.M.R. Jewell  
Secretary of the Interior  
Department of the Interior  
1849 C Street, N.W.  
Washington, D.C. 20240

References:

- Carroll, C. 2007. Interacting effects of climate change, landscape conversion, and harvest on carnivore populations at the range margin: Marten and Lynx in the northern Appalachians. *Conservation Biology* 21:1092-1104.
- Devineau, O., T. M. Shenk, G. C. White, P. F. Doherty, P. M. Lukacs, and R. H. Kahn. 2010. Evaluating the Canada lynx reintroduction programme in Colorado: patterns in mortality. *Journal of Applied Ecology* 47:524-531.
- Iossa, G., C. D. Soulsbury, and S. Harris. 2007. Mammal trapping: a review of animal welfare standards of killing and restraining traps. *Animal Welfare* 16:335-352.
- Miller, J. J. and S. K. Rust. 2004. Canada Lynx Habitat Inventory - Latour Divide and Lookout Mountain, Idaho. Idaho Conservation Data Center: Idaho Department of Fish and Game & Bureau of Land Management.
- Murray, D. L., T. D. Steury, and J. D. Roth. 2008. Assessment of Canada lynx research and conservation needs in the southern range: Another kick at the cat. *Journal of Wildlife Management* 72:1463-1472.
- Ripple, W. J., A. J. Wirsing, R. L. Beschta, and S. W. Buskirk. 2011. Can Restoring Wolves Aid in Lynx Recovery? *Wildlife Society Bulletin* 35:514-518.
- Shenk, T. M. Undated. Lynx Annual Report 2008-2009. Division of Wildlife-Wildlife Research Report Period Covered: July 1, 2008-August 31, 2009.



**Rebecca Dockter**  
 Chief Legal Counsel  
**Aimee Fausser**  
 Agency Legal Counsel  
 Montana Department of Fish, Wildlife & Parks  
 P.O. Box 200701  
 Helena, MT 59620-0701  
 Ph: (406) 444-4047; (406) 444-4045  
 Fax: (406) 444-7456  
 rdockter@mt.gov; afausser@mt.gov  
*Attorneys for the Defendants*

IN THE UNITED STATES DISTRICT COURT  
 FOR THE DISTRICT OF MONTANA  
 MISSOULA DIVISION

FRIENDS OF THE WILD SWAN, a non- )  
 profit organization, et al. )

Plaintiffs, )

vs. )

DAN VERMILLION, in his official )  
 capacity as Chairman of the Montana )  
 Fish, Wildlife and Parks Commission, et )  
 al. )

Defendants, )

and )

MONTANA TRAPPERS )  
 ASSOCIATION, NATIONAL )  
 TRAPPERS ASSOCIATION, TOBY )  
 LEWIS WALRATH, and WILLIAM )  
 JAMES KATS, )

Defendant-Intervenors. )

13-CV-00066-DLC

**DECLARATION OF  
 BRIDGET FAHEY**

I, BRIDGET FAHEY, in accordance with the requirements of 28 U.S.C. § 1746 declare:

1. I am the Endangered Species Chief in Region 6 of the United States Fish and Wildlife Service (Service), an agency of the Department of the Interior. My office is located in Lakewood, Colorado. In my capacity as Endangered Species Chief, I am responsible to the Assistant Regional Director for Ecological Services of Region 6 of the Service for Region 6's administration of the Endangered Species Act (Act), 16 U.S.C. §§ 1531-1544, which includes section 7 consultations concerning species that are listed under the Act.
2. I have 16 years of work experience implementing the Act, including substantial expertise pertaining to section 7 of the Act. Prior to my current position, I served as the Service's Region 6's Section 7 and Habitat Conservation Planning Coordinator for four years. In this role, I coordinated section 7 consultation and section 10(a)(1)(B) Habitat Conservation Planning (HCP) activities within Region 6. This position included acting as an in-house technical expert reference for field and regional staff for issues pertaining to sections 7 and 10(a)(1)(B) of the Act. I disseminated national guidance and information, reviewed biological opinions and HCPs, represented Region 6 in conducting nationwide section 7 consultations, assisted with complex section 7 and HCP negotiations, processed 10(a)(1)(B) permit applications, and conducted section 7 consultations on projects that transcend State or Regional boundaries. I also serve as an instructor for the Service's National Conservation Training Center's section 7 and HCP courses. I am considered to be an expert in section 7 implementation.
3. The Service has a legal obligation to ensure that export levels of species listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) will not be detrimental to the survival of the species. We also must determine that any exported specimens have been legally acquired. River otter, Canada lynx, bobcat, gray wolf, and brown bear are listed in Appendix II of CITES. A State or Tribe interested in programmatic export approval of river otter, Canada lynx, bobcat, gray wolf, and brown bear may apply to be included into the Service's CITES Export Program (CEP). The Service's CITES-implementing regulations concerning the approval of State and tribal export programs for Appendix-II furbearers are detailed in 50 CFR 23.69. The CEP is administered by the Service's Division of Management Authority (DMA). The Service has required since the 1978-1979 harvest season that river otter, Canada lynx, bobcat, gray wolf, and brown bear that are harvested in the United States under the CEP be tagged with a serially unique, non-reusable tag in order to facilitate the export of such specimens from the United States. A State or Tribe approved into the CEP must submit a CITES furbearer activity report to DMA by October 31 of each year that provides information as to whether or not the population status or management of the species has changed within the State or tribal lands. Montana has been approved by DMA for the export of bobcat taken under the CEP since 1977.
4. On September 24, 2001, the Service completed a formal biological opinion on the effects of the CEP for Appendix II furbearer species on the contiguous United States distinct population segment (DPS) of the Canada lynx (*Lynx canadensis*) pursuant to section 7(a)(2) of the Endangered Species Act, as amended (CITES BO). This biological opinion

analyzed the effects of the Service's regulation of the export of bobcat pelts, which is designed to ensure that bobcat pelts to be exported were legally acquired and their export will not be detrimental to the survival of the species or to other similarly-listed species, such as the lynx. The Service's Headquarters Office in Washington, DC, was the lead for the consultation at the time.

5. After analyzing the current status of the lynx, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, the Service concluded that the CEP for Appendix II Furbearer species is not likely to jeopardize the continued existence of the United States DPS of the Canada lynx. Thus, the program could proceed in compliance with the Act.
6. After concluding that the proposed action was not likely to jeopardize the lynx, the biological opinion provided an exemption to the prohibition against take for two lynx mortalities and two lynx injuries annually due to trapping over the 10-year term of the biological opinion. We anticipated that the agent responsible for the take would be individual trappers that were licensed or permitted by the State fish and wildlife agencies within the range of lynx.
7. On July 30, 2007, the Service's Ecological Services Program, which administers consultations pursuant to section 7 of the Act, received a request for technical assistance from the DMA to determine whether reinitiation of consultation was necessary, as the amount of bobcat trapping in the States had increased substantially from the projected amount of 8,000 individuals predicted in the biological opinion. At that time, the Service's Headquarters office reassigned the lead for the consultation to Region 6, and I became the lead Service biologist for the consultation. After analyzing the best available information, we determined that reinitiation of consultation was not necessary because, despite the growth in bobcat trapping, effects to lynx from the program beyond those anticipated in the biological opinion had not been documented. The biological opinion found that the proposed action was likely to result in injury or death of lynx and exempted take of two lynx from mortality and two from injury annually. However, no death or injury of lynx had been documented as a result of the proposed action, so it appeared that effects to lynx from the proposed action were substantially lower than we had anticipated.
8. On March 12, 2012, in my role as the lead for this consultation, I received a request from DMA to reinitiate consultation to extend the time frame for the biological opinion. The original biological opinion was for a length of ten years. Based on our analysis that the analysis in the original BO was still valid, we extended the time frame of the BO to be indefinite, and reaffirmed our conclusion that the proposed action would not cause jeopardy to the lynx. Therefore, the BO is still in effect.

**Application of the Act, Service Regulations, and Service Policies Regarding Applicants to the CITES BO**

9. For the purposes of the CITES BO, the Service considers that the exemption to the

prohibition against take in the Act extends to the Applicant. This conclusion is well supported by the Act, its implementing regulations at 50 C.F.R. § 402.02, and Service policy and guidance in the form of the Endangered Species Consultation Handbook (Handbook).

10. The Act's implementing regulations at 50 C.F.R. § 402.02 defines an applicant as "any person, as defined in section 3 of the Act, who requires formal approval or authorization from a Federal agency as a prerequisite to conducting the action." "Person" as defined by the Act "means an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal Government, of any State, municipality, or political subdivision of a State, or of any foreign government; any State, municipality, or political subdivision of a State; or any foreign government; or any other entity subject to the jurisdiction of the United States." Thus, the State of Montana is considered to be an applicant in the section 7 process because it is a State government agency that needs approval from DMA under CITES to participate in the bobcat tagging program.
11. The Act at 7(a)(4) states that, "if after interagency consultation, the Secretary concludes that an agency action will not violate subsection 7(a)(2), the Secretary shall provide the Federal agency and the applicant concerned, if any, with a written incidental take statement." (emphasis added) The clear implication here is that the applicant and the Federal agency are both receiving an incidental take statement (ITS) from the Service.
12. The explanatory language for the Act's implementing regulations for section 7 (regulations) also discusses the relationship between the Federal action agency, the applicant, and the incidental take statement: "The 1982 Amendments also established several new processes under section 7. First, a new subsection 7(b)(4) allows for the issuance of an 'incidental take statement' along with a biological opinion. This 'incidental take statement' operates to exempt the Federal agency and any permit or license applicant involved from the section 9 'taking' prohibitions under the Act if the subsequent implementation of the action is consistent with the terms and conditions of the incidental take statement." (p. 19926)(emphasis added)
13. The definition of incidental take in the regulations (50 C.F.R. §402.02, page 19958) further supports the position that incidental take statements cover applicants as well as the Federal action agency. The regulations define "incidental take" as takings "that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant." [50 C.F.R. §402.02]. This information again confirms that during consultation incidental take and all that flow from that (ITS etc.) is applied to the applicant as well.
14. Finally, the Handbook in several places reiterates the relationship between the ITS and the applicant (page 2-11; page 4-45, page 4-46; page 4-54) by establishing that the action agency and applicants must comply with the reasonable and prudent measures and implementing terms and conditions in the Services' incidental take statement to avoid potential liability for any incidental take. In the case of the CITES BO, DMA is

responsible for providing the States with information on lynx identification, life-history, recovery needs, and references to current and ongoing methodologies to reduce mortality and injury to lynx when trapping bobcat. Because DMA has and continues to fulfill its responsibilities under the reasonable and prudent measure and terms and conditions, we consider the ITS to be valid and to provide an incidental take exemption to both DMA and the States that receive authorization from DMA to participate in the bobcat trapping program.

Pursuant to the provisions of 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed this 10<sup>th</sup> day of July, 2014, in Lakewood, Colorado.

  
Bridget Fahey  
Region 6 Chief of Endangered Species

**Lynx Incidental Capture Report**

**Report No. 2012-TRP003**

**Lynx ID: LIC23**

**Name of Individual Reporting Capture:** [REDACTED]

Trapping for IFW deer yard predator program

**Name of Biologist/Warden Responding to Report:** Jen Vashon (lynx biologist) and Wdn. Bob Johansen

**Type of Capture:** Trap

*Set type:* Small dirthole

*Trap type and size:* 1.75 victor plain jaws

*Jaw spread and swivels:* 5 5/16" and 2 swivels

*Staking:* staked on 8 inch chain

*Bait:* Yes, Hiwatha Valley

*Lure:* Yes,

*Visibility of Bait:* No

*Legal Set?* Yes

**Location of Capture:** East Middlesex Canal Grant, Little Spencer Pond Camp Rd

**Wildlife Management District:** 9

**GPS Coordinates (UTM preferred):** 456131, 5068456

**GPS Map Datum (NAD 83 preferred):** NAD83

**Date of Capture:** 10/21/12

**Disposition of Lynx:** Alive, sedated, and released on site

**Age/Sex:** Male 22lbs

**Description of events**

**Response:** At 1012 on 10/21/2012, Jen Vashon received a call on the lynx hotline from a trapper reporting the capture of a lynx in East Middlesex Canal Grant. The lynx had just been caught (when he initially checked his trap, he had not caught an animal, 10 minutes later when he return to the area the cat was in the trap). Jen Vashon, contacted Maine Warden Service, USFWS Special Agent Eric Holmes, and regional biologist Doug Kane. Wdn. Bob Johansen and biologists Jen Vashon, Doug Kane, Jim Connolly and contract field technician Lisa Bates responded (training opportunity for staff). Wdn. Johansen checked the set and interviewed the trapper and determined that the trap was legal. The lynx was sedated, examined for injuries, provided supportive care and released from the trap onsite.

**Weather conditions:** Daytime temperature was 40 degrees F with overcast skies and wind. Animal caught approximately 10 am; overnight temperatures not applicable.

**Disturbance:** No vehicle traffic in the area when staff was on-site and trapper reported very little activity in the area on a Sunday (no hunting). Trapper noted that the wind seemed to make the cat a little jumpy.

**Assessment of the lynx:** The animal was sedated, examined for injuries following SOAP procedures (subjective, objective, assessment, plan). Eyes, ears, nose, mouth, neck, torso, were normal and left front capture foot was abnormal (minor laceration- ~1/8" long through first layer of skin and no tissue involvement). The laceration was irrigated with saline and applied adhesive spray bandage. Body temperature was normal. No broken, chipped, or missing teeth. No swelling on capture foot. The animal was a healthy subadult male and weighed 22lbs. The animal was given antibiotics and fluids subcutaneously as supportive care. Body measurements and DNA were collected and the animal was marked with yellow eartags in each ear. The lynx was observed during recovery and walked away putting weight on all four legs.

See attached check list for reporting lynx captures and WS Incident Card for more information.

Report prepared by: Jennifer Vashon 10/23/2012

Report reviewed & updated by: Jen Vashon 10/30/2012, Wdn Johansen 10/30/2012

# Call For Service

CFS Number: **WS12-M08192**

Date: **10/21/2012**

## Call For Service

---

|                  |                                           |                  |                                             |
|------------------|-------------------------------------------|------------------|---------------------------------------------|
| CFS Number       | <b>WS12-M08192</b>                        | Complainant      | ██████████                                  |
| Date             | <b>10/21/2012</b>                         | Address          | ██████████                                  |
| Dispatcher       |                                           | City, State, Zip | ██████████                                  |
| Call Source      |                                           | Phone            | ██████████                                  |
| Received         | <b>12:30:00 PM</b>                        | Call type        |                                             |
| Dispatched       | <b>12:30:00 PM</b>                        | Reported Offense | <b>6780 - Endangered/Threatened Species</b> |
| Arrived          | <b>2:30:00 PM</b>                         | Verified Offense | <b>6780 - Endangered/Threatened Species</b> |
| Cleared          | <b>4:30:00 PM</b>                         | Tow Company      |                                             |
| Location         | <b>Little Spencer Pond Camps Rd</b>       | Vehicle          |                                             |
| City, State, Zip | <b>East Middlesex Canal Grant TWP</b>     | Vehicle License  |                                             |
| Jurisdiction     | <b>W12 - Section 12</b>                   | Disposition      | <b>1 - Active</b>                           |
| Grid             | <b>11869 - East Middlesex Canal Grant</b> | Priority         |                                             |
| Sector           |                                           | Classification   |                                             |
| Map              |                                           | Agency           | <b>MWS - Maine Warden Service</b>           |
| X Coordinate     |                                           | Case             |                                             |
| Y Coordinate     |                                           | Reviewed On      |                                             |
| Reviewed By      |                                           |                  |                                             |

### Officers

11396 - Johansen, Robert

### **CFS Subject Profiles:** ██████████

---

|            |            |                     |            |
|------------|------------|---------------------|------------|
| Full Name  | ██████████ | Address             | ██████████ |
| CSZ        | ██████████ | Home Phone          | ██████████ |
| Work Phone | ██████████ | Email Address       |            |
| Sex        | ██████████ | Race                | ██████████ |
| Ethnicity  | ██████████ | DOB                 | ██████████ |
| Age        | ██████████ | Hair Color          |            |
| Eye Color  |            | Height              |            |
| Weight     |            | DLN                 |            |
| State      |            | Driver License Exp. |            |
| SSN        |            |                     |            |

Notes 2236 - R. Johansen - 3.5 Regular Hours. 70 Truck Miles. Responded to the report of a Canada Lynx caught in a trap near Little Spencer Mountain. Biologist Doug Kane and Jen Vashon were also responding the scene as well. Upon arrival the Biologists were prepared to start their work assessing the Lynx. I obtained some information from the trapper who was identified as ██████████. ██████████ I has been trapping for 30 years and at this time is participating in the Departments trapping program to target coyotes in deer wintering areas. ██████████ said he is aware of all the new rules concerning trapping in areas WMD's with Lynx. After the Lynx was removed from the trap by the Biologists, I visited the trap site and observed the trap was set beside the road with no visible bait showing. The trap was a Victor brand size 1.75 with a 5 and 5/16 inch jaw spread. I

# Call For Service

CFS Number: **WS12-M08192**

Date: **10/21/2012**

observed a short chain between the bottom center of the trap and the stake. This trap and set were all in compliance with current trapping rules for trapping in areas with Lynx. [REDACTED] was very cooperative throughout the entire time we were there to investigate the scene. I took numerous photos of the trap site and area location.

0456131  
5068456 *J trapsite*

**FORM FOR REPORTING & RESPONDING TO INCIDENTAL CAPTURES OF LYNX**

**1. Obtain information from CALLER**

Date 10/21/12 Time 10:13 am IFW Staff collecting caller info: Jen Vashon  
 Trapper/Individual Reporting [redacted] *trapping program targeting coyotes in deer yards*  
 Address [redacted] Phone number: [redacted]  
 Circle all info that applies  
 Type of trap?  Foot-hold  Conibear  
 Animal still in trap?  Yes  No  
 Animal's Behavior  Calm  Sleeping  Pacing *Wind & bathing cat*  
 When was trap last tended? stake / short chain  
 Is animal entangled?  Yes  No  
 Lynx injured?  Yes  No  
 Disturbance at the site?  Yes  No  
 Vehicle traffic *low - Sunday*  Human disturbance  
 Equipment operation  Animal disturbance  
 \*advise caller to minimize disturbance to the animal\*  
 Current weather?  Clear  Rain  Snow  Windy  
 Overnight weather?  Clear  Rain  Snow  Windy  
 Current temperature? 40°  
 Overnight temperature? N/A Cat caught ~ 1000 am  
 Directions and meeting time: 1:30 pm  
Spencer Pond Camps - Right before Camps (Lobster Lake)  
Gravel pit on left - trapper has cell coverage will call at 1335 to arrange meeting spot.

**2. Contact IFW lynx hotline 592-4734 to inform lynx specialist/ Mammal Group**

**3. At the site minimize disturbance (crowd and/or traffic control)**

**4. Information when ON-SITE**

Circle all information that applies  
 Size of trap  #1  #2  #3  110  120  160  220 Other: \_\_\_\_\_  
 Inside jaw spread 5 5/16 inches  
 Jaw type  Padded  Laminated  Offset  
 Securing method  Staked  Drag  
 Bait?  Yes  No Visible?  Yes  No *H. weather Valley*  
 Lure?  Yes  No Type: 8" chain Pinhole small  
 Town: East Middlesex Canal Grant  
 Location: \_\_\_\_\_  
 GPS coordinates 456131 E 5068456 N  
 GPS datum WGS84 NAD27  NAD83  
 All people present  
 1 [redacted]  
 2 [redacted]  
 3 Jen Vashon  
 4 Doug Kere  
 5 Lisa Bates  
 6 Jim Connolly  
 7 Walter Bob Johnson

**5. At the site. Assess the ANIMAL prior to chemical immobilization**

Animal entangled in vegetation?  Yes  No  
 Unresponsive?  Yes  No  
 Broken bones?  Yes  No If yes,  Compound  non-compound  
 Bleeding?  Yes  No If yes,  minor  Major  
 Laceration?  Yes  No If yes,  superficial (through 1st layer of skin)  major (deep requires sutures)  
 Limping/dragging limb?  Yes  No

**6. Anesthesia (follow protocol and complete capture form)**

**7. Action Taken**

Release uninjured?  Y  N Euthanized?  Y  N Taken to rehab. Center?  Y  N  
 Name & Location of Rehab Center \_\_\_\_\_ Phone # \_\_\_\_\_

Comments: *Trapper found cat in trap ~ 10 min after initially checking the trap*  
4-5 lynx  
4k dens, 1E - TWS - [redacted] observed a female & 4 kittens  
4 last week (10/16/12) cross the road, ~ 3 mi from capture site

\*See Department Policy for situations when you can advise the trapper to release a lynx\* *2011-12*

L. Bates [redacted] Wdn Bob Johnson

|                                          |                                         |                                         |
|------------------------------------------|-----------------------------------------|-----------------------------------------|
| DATE: <u>10/21/12</u>                    | <b>Incidental Lynx Capture Form</b>     | Lynx ID# <u>LIC 23</u>                  |
| Observers: <u>Vashon, Connolly, Kane</u> | Town: <u>East Middlesex Canal Grant</u> | Time when manageable: <u>~1502h</u>     |
| Recorder: <u>LB, JV</u>                  | County: <u>PISCATAQUIS</u>              | Time of recovery/ release: <u>1554L</u> |
| UTMe <u>456077</u> UTMn <u>5068369</u>   | Datum: WGS84 NAD27 <u>NAD83</u>         |                                         |

| Mix Used:            | Ketaset Concentration: | Xylazine Concentration: | 5:1 Ket/Xyl Concentration: | Time        | Delivery Method    | Additional Drug (If Needed)     | Amount                        |  |
|----------------------|------------------------|-------------------------|----------------------------|-------------|--------------------|---------------------------------|-------------------------------|--|
|                      | <u>100 mg/ml</u>       | <u>100mg/ml</u>         |                            |             |                    |                                 |                               |  |
| 1 <sup>st</sup> Dose | <u>1.15</u> m l        | <u>0.22</u> m l         |                            | <u>1400</u> | <u>Spring pole</u> | Antibiotic (SCorIM) 0.5cc/10lbs | <u>1cc @1534</u>              |  |
| 2 <sup>nd</sup> Dose |                        |                         |                            |             |                    | Yohimbine(IVorIM) 0.5cc/20lbs   | <u>1cc @1554</u>              |  |
| 3 <sup>rd</sup> Dose |                        |                         |                            |             |                    | Midazolam(IVorIM) 0.5cc/slowly  |                               |  |
| 4 <sup>th</sup> Dose |                        |                         |                            |             |                    | Epinephrine(SCorIM) 0.5cc/10lb  |                               |  |
| Comments:            |                        |                         |                            |             |                    |                                 | Doxapram (IVorSL) 1.0cc/22lbs |  |

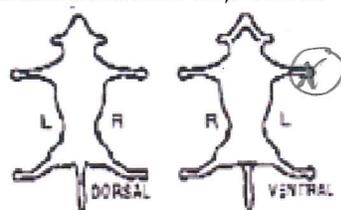
EarTag#(Left) 226 (Right) 226 Tag Color: Yellow Green Red Other: \_\_\_\_\_

Radio Collared: Y N Initial/Previously Collared Collar Works: Y N Make: LT Sirtrack ATS GPS SAT VHF

Radio Collar Frequency: \_\_\_\_\_ Replacement Collar Freq.: \_\_\_\_\_ Collar Life: \_\_\_\_\_ months

Leather Circumference: \_\_\_\_\_ mm

Saline 110cc SQ

| <b>PHYSICAL INFORMATION</b><br>Sex: <u>M</u> F Year Born(if known) _____<br>Estimated Age: Kitten Subadult <u>Adult</u><br><b>Teeth:</b> Normal <input checked="" type="checkbox"/> Missing <input type="checkbox"/> Broken <input type="checkbox"/> Worn <input type="checkbox"/><br>Describe: <u>VERY WHITE, NO WEAR OR BROKEN</u><br>Photo of Teeth? side view (2) _____ front view _____<br><b>Coat Condition:</b> Prime <input checked="" type="checkbox"/> Summer <input type="checkbox"/><br>Shedding <input type="checkbox"/> Mange <input type="checkbox"/> Bare/Worn _____<br>Capture Foot? Front: <u>L</u> R or Hind: L, R<br>Capture Foot Injuries? <u>Y</u> N<br>Describe: <u>no swelling, small laceration w/ size of sharpie marker tip, irrigated &amp; applied adhesive bandage, always</u> | <b>Subjective Body Condition:</b><br>Poor <input type="checkbox"/> Fair <input type="checkbox"/> Good <input checked="" type="checkbox"/> Excellent <input type="checkbox"/><br><b>Objective</b> Normal    Abnormal<br>Eyes/Ears <input checked="" type="checkbox"/> <input type="checkbox"/><br>Nose/Mouth <input checked="" type="checkbox"/> <input type="checkbox"/><br>Neck/Torso <input checked="" type="checkbox"/> <input type="checkbox"/><br>Skin <input checked="" type="checkbox"/> <input type="checkbox"/><br>Extremities <input type="checkbox"/> <input checked="" type="checkbox"/><br><b>Assessment:</b> <u>SMALL LACERATION - MINOR - ON OUTER MIDDLE CAPTURE FOOT PAD</u><br><b>Plan:</b> Release/no sedation, Euthanize<br><u>Sedation: Treat in field, or Transport to Vet;</u><br><u>IRRIGATED LACERATION + ADMINISTERED Antibiotic &amp; Saline</u> | Mark abnormal area below:<br><br><b>Normal - 101-102.5</b><br><table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Body Temp</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>102.3 F</td> <td>1515h</td> </tr> <tr> <td>101.8 F</td> <td>1522h</td> </tr> <tr> <td>100.5 F</td> <td>1531h</td> </tr> <tr> <td>101.0 F</td> <td>1541h</td> </tr> <tr> <td>F</td> <td></td> </tr> </tbody> </table> | Body Temp | Time | 102.3 F | 1515h | 101.8 F | 1522h | 100.5 F | 1531h | 101.0 F | 1541h | F |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------|---------|-------|---------|-------|---------|-------|---------|-------|---|--|
| Body Temp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |      |         |       |         |       |         |       |         |       |   |  |
| 102.3 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1515h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |      |         |       |         |       |         |       |         |       |   |  |
| 101.8 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1522h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |      |         |       |         |       |         |       |         |       |   |  |
| 100.5 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1531h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |      |         |       |         |       |         |       |         |       |   |  |
| 101.0 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1541h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |      |         |       |         |       |         |       |         |       |   |  |
| F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |      |         |       |         |       |         |       |         |       |   |  |

| BODY MEASUREMENTS           |               | Tail Banding Pattern | No Bands                            | 1 Band | 2 Bands                    | 3 Bands |
|-----------------------------|---------------|----------------------|-------------------------------------|--------|----------------------------|---------|
| Weight (Actual or Estimate) | <u>22</u> lbs |                      |                                     |        |                            |         |
| Neck Circumference          | <u>21</u> mm  | Color of tip of tail | Completely Black                    |        | Black on top/white beneath |         |
| Chest Girth                 | <u>36</u> mm  | Hind Foot Coloration | Dark Brown <u>Grey</u> Other: _____ |        |                            |         |
| Shoulder Height             | — mm          | Toe Coloration       | Inside                              | Middle | Middle                     | Outside |
| Tail Length (tip of bone)   | — mm          | Left Front           | <u>N/A</u> ALL BROWN TOES           |        |                            |         |
| Tail Length (tip of tail)   | — mm          | Right Front          |                                     |        |                            |         |
| Total Length                | — mm          | Left Rear            |                                     |        |                            |         |
| Zygomatic Arch              | — mm          | Right Rear           |                                     |        |                            |         |
| Ear Tuft Length             | — mm          |                      |                                     |        |                            |         |

Scars: Y N Description NONE FOUND

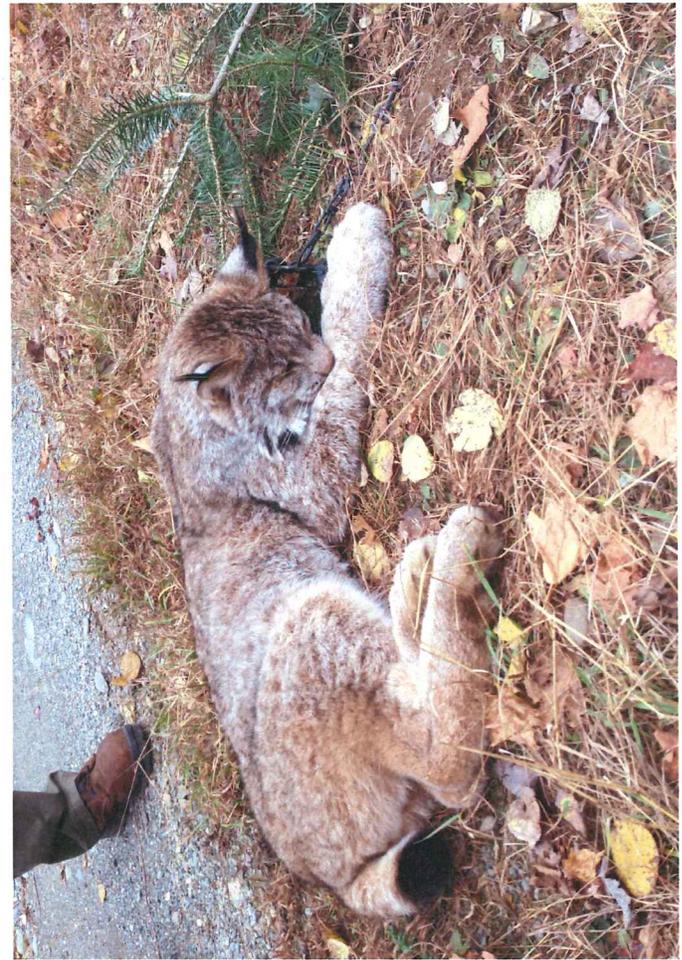
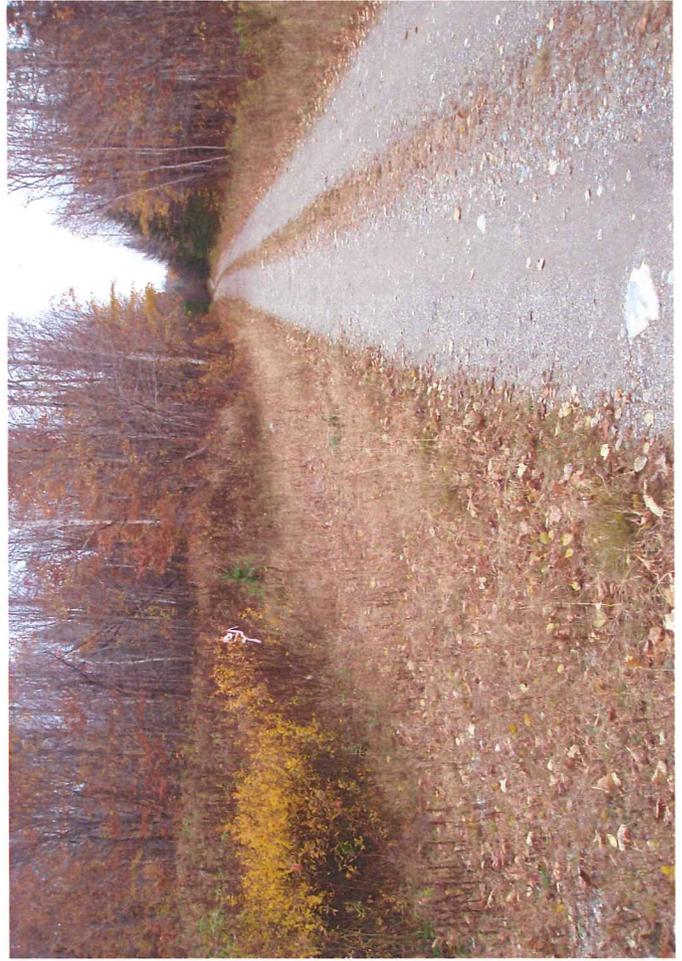
DNA: Hair Sample Y N Tissue Sample Y N Blood Sample Y N

Parasites: Y N Sample: Y N Rare Light Common

Photos? YES NO Photo Number JIM CONNOLLEY'S PERSONAL TRAPPER'S CAMERA LB'S HD CAMERA

Reviewed Data Sheet? YES NO

Comments: SALINE SQ ~110ml between shoulder blades, hindquarter, shoulder along back  
Animal captured by two toes at edge of jaw -







April 7, 2014

*Sent via Email and Certified Mail/Return Receipt Requested*

C.L. "Butch" Otter, Governor  
Office of the Governor  
700 West Jefferson  
Boise, ID 83701  
governor@gov.state.id.us

Virgil Moore, Director  
Idaho Department of Fish and Game  
P.O. Box 25  
Boise, ID 83707  
virgil.moore@idfg.idaho.gov

Brad Corkill, Commissioner  
Idaho Department of Fish and Game  
14701 S. Shady Lane  
Cataldo, ID 83810

Fred Trevy, Commissioner  
Idaho Department of Fish and Game  
6626 Cougar Ridge Road  
Lewiston, ID 83501

Bob Barowsky, Commissioner  
Idaho Department of Fish and Game  
P.O. Box 79  
Fruitland, ID 83619

Kenny Anderson, Commissioner  
Idaho Department of Fish and Game  
4649 E. 250 N.  
Rigby, ID 83442

Will Naillon, Commissioner  
Idaho Department of Fish and Game  
HC 63 Box 1812, 987 Foothills Rd.  
Challis, ID 83226

Mark Doerr, Commissioner  
Idaho Department of Fish and Game  
3513 E. 3985 N.  
Kimberly, ID 83341

Randy Budge, Commissioner  
Idaho Department of Fish and Game  
201 E. Center  
Pocatello, ID 83201

Re: Sixty-Day Notice of Intent to Sue for Violations of the Endangered Species Act for Take of Canada Lynx Incidental to Authorized Recreational Trapping

Dear Governor Otter, Director Moore, and Commissioners:

On behalf of the Center for Biological Diversity, Western Watersheds Project, and Friends of the Clearwater, you are hereby notified that we intend to file suit against the Governor of Idaho, the Director of the Idaho Department of Fish and Game, and the members of the Fish and Game Commission (together "the State"), in their official capacities, for violations of sections 9 and 4(d) of the federal Endangered Species Act ("ESA").<sup>1</sup> The State has authorized and continues to permit recreational trapping in Idaho that is causing unlawful

<sup>1</sup> 16 U.S.C. §§ 1538(a)(1)(B), 1533(d); 50 C.F.R. § 17.40(k).

take of Canada lynx (*Lynx Canadensis*), a species that is protected as threatened under the ESA. The State does so in the absence of a regulatory scheme to avoid, minimize, or mitigate such take, and without an incidental take permit (“ITP”) from the U.S. Fish and Wildlife Service (“FWS”).

We provide this letter pursuant to the citizen suit provision of the ESA.<sup>2</sup> If these violations do not cease within the next 60 days or the State has not begun the process of obtaining an ITP, we will file suit in United States District Court to enjoin State-authorized trapping that results in the incidental take of Canada lynx.

## I. THE RELEVANT STATUTORY AND REGULATORY FRAMEWORK

### A. The ESA and its Take Prohibition

The ESA is “the most comprehensive legislation for the preservation of endangered species ever enacted by any nation.”<sup>3</sup> Its fundamental purposes are “to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved [and] to provide a program for the conservation of such endangered species and threatened species ....”<sup>4</sup> To achieve these objectives, the ESA directs FWS to determine which species of plants and animals are “threatened” and “endangered” and to place them on the endangered species list.<sup>5</sup> An “endangered” species is one “in danger of extinction throughout all or a significant portion of its range,” and a “threatened” species is “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”<sup>6</sup>

Once a species is listed, the ESA provides a variety of procedural and substantive protections to ensure not only the species’ continued survival, but ultimately its recovery. According to the U.S. Supreme Court, “Congress has spoken in the plainest words, making it clear that endangered species are to be accorded the highest priorities.”<sup>7</sup>

Among the many protections for species in the ESA, section 9 prohibits any “person” from “taking” or causing take of any member of any endangered species and the Service has extended this prohibition to the Canada lynx.<sup>8</sup> The ESA defines “take” to mean “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”<sup>9</sup> Congress intended “take” to be defined in the “broadest possible

---

<sup>2</sup> *Id.* § 1540(g)(2).

<sup>3</sup> *TVA v. Hill*, 437 U.S. 153, 180 (1978).

<sup>4</sup> 16 U.S.C. § 1531(b).

<sup>5</sup> *Id.* § 1533.

<sup>6</sup> *Id.* §§ 1532(6), (20).

<sup>7</sup> *Hill*, 437 U.S. at 155.

<sup>8</sup> 16 U.S.C. § 1538(a)(1)(B), § 1533(d); 50 C.F.R. § 17.40(k)(2).

<sup>9</sup> 16 U.S.C. § 1532(19).

manner to include every conceivable way” in which a person could harm or kill fish or wildlife.<sup>10</sup>

An act can cause take directly or indirectly, regardless of whether the act was purposeful or deliberate.<sup>11</sup> Therefore, incidental take also violates section 9 unless it is permitted by FWS. An act may also constitute take whether or not it results in injury or death, such as when a listed species is trapped or otherwise harassed. FWS defines “harass” to mean “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include but are not limited to, breeding, feeding, or sheltering.”<sup>12</sup>

The take prohibition applies to any “person,” including “any officer, employee, agent, department, or instrumentality ... of any State, municipality, or political subdivision of a State ... [or] any State, municipality, or political subdivision of a State ... .”<sup>13</sup> Furthermore, the ESA citizen suit provision authorizes suits against any person, including any state governmental instrumentality or agency to the extent permitted by the Eleventh Amendment, to enforce the prohibition on take.<sup>14</sup>

It is unlawful for agencies or agency officials to take or to “cause [take] to be committed” by another person.<sup>15</sup> Thus, courts have held that state officials are liable if they authorize a third party to undertake an activity that causes unpermitted take, such as issuing a trapping license that results in incidental trapping of an endangered or threatened species.<sup>16</sup> A federal court found that the act of allowing trapping within a state’s borders can result in take liability, where lynx were incidentally taken by recreational trapping.<sup>17</sup>

---

<sup>10</sup> S. Rep. No. 307, 93rd Cong., 1st Sess. 1, reprinted in 1973 U.S. Code Cong. & Admin. News 2989, 2995.

<sup>11</sup> *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687, 704 (1995).

<sup>12</sup> 50 C.F.R. § 17.3.

<sup>13</sup> 16 U.S.C. §§ 1532(13), 1538(a)(1).

<sup>14</sup> *Id.* § 1540(g)(1); see also *Ex Parte Young*, 209 U.S. 123, 159-60 (1908) (authorizing lawsuits for prospective relief against state officials acting in violation of federal law).

<sup>15</sup> *Id.* § 1538(g).

<sup>16</sup> *Strahan v. Coxe*, 127 F.3d 155, 163 (1st Cir. 1997) (“the statute not only prohibits the acts of those parties that directly exact the taking, but also bans those acts of a third party that bring about the acts exacting a taking,” and “a governmental third party pursuant to whose authority an actor directly exacts a taking of an endangered species may be deemed to have violated the provisions of the ESA”); see also *Loggerhead Turtle v. County Council of Volusia County, Florida*, 896 F. Supp. 1170, 1182 (M.D. Fla. 1998), reversed and remanded on other grounds by *Loggerhead Turtle v. County Council of Volusia County*, 148 F.3d 1231 (11th Cir. 1998); *Pac. Rivers Council v. Brown*, No. 02-243, 2002 U.S. Dist. LEXIS 28121 (D. Or. Dec. 23, 2002); *Seattle Audubon Soc’y v. Sutherland*, No. 06-1608, 2007 U.S. Dist. LEXIS 31880 (W.D. Wash. May 1, 2007).

<sup>17</sup> *Animal Prot. Inst. v. Holsten*, 541 F. Supp. 2d 1073, 1079 (D. Minn. 2008); see also Idaho Code § 36-401 (prohibiting trapping in Idaho without a state-issued license). As in *Animal Prot. Inst.*, Idaho has not issued regulations that would assist in avoiding take of lynx. *Animal Prot. Inst.*, 541 F. Supp. 2d at 1080.

Like the defendants in *Animal Prot. Inst.*, a state may be able to avoid take liability by obtaining an incidental take permit from FWS under section 10 of the ESA.<sup>18</sup> For an ITP to be issued, take of a listed species must be incidental to a state's primary action and the state must develop a Habitat Conservation Plan ("HCP") that will facilitate conservation of the species.<sup>19</sup> FWS also must find that the HCP will minimize and mitigate the impacts of take "to the maximum extent practicable," that the applicant has adequate funding to carry out the plan, and that the incidental take will not appreciably reduce the likelihood of survival of the species.<sup>20</sup>

## B. The Current Framework Governing Trapping in Idaho

All wildlife in Idaho belongs to the State.<sup>21</sup> State policy assures that wildlife "shall be preserved, protected, perpetuated, and managed."<sup>22</sup> The Fish and Wildlife Commission administers state wildlife policy, but it does not have the authority to change state wildlife policy.<sup>23</sup> However, because circumstances change, the Commission has the authority to promulgate regulations to preserve and protect state wildlife.<sup>24</sup> The Commission decides "when, under which circumstances, in which localities, by what means, what sex, and in what amounts and numbers the wildlife of this state may be taken."<sup>25</sup> No person may trap any wild animal without first having procured a license.<sup>26</sup> The license is granted and administered by the Idaho Department of Fish and Game ("IDFG").<sup>27</sup> The license is subject to limitations under Title 36 of the Idaho Code and Commission regulations.<sup>28</sup>

However, to date neither the Commission nor IDFG have set any specific requirements to protect lynx from incidental trapping or to reduce the incidental take of lynx. The entire regulatory scheme governing recreational trapping in Idaho currently only includes guidelines to reduce the incidental take of lynx – but these guidelines are inadequate to

---

<sup>18</sup> 16 U.S.C. § 1539(a)(1)(B).

<sup>19</sup> *Id.* and (a)(2); *see also* *Sierra Club v. U.S. Fish and Wildlife Serv.*, 245 F.3d 434, 441-42 (5th Cir. 2001) ("'[c]onservation' is a much broader concept than mere survival" because the "ESA's definition of 'conservation' speaks to the recovery of a threatened or endangered species").

<sup>20</sup> 16 U.S.C. § 1539(a)(2).

<sup>21</sup> Idaho Code § 36-103(a).

<sup>22</sup> *Id.*

<sup>23</sup> *Id.* § 36-103(b).

<sup>24</sup> *Id.*

<sup>25</sup> *Id.* § 36-104(b)(1).

<sup>26</sup> *Id.* § 36-401.

<sup>27</sup> *See* IDFG, *Application for Trapping License* (Revised July 2013), <http://fishandgame.idaho.gov/public/licenses/trapLicenseApp.pdf>.

<sup>28</sup> Idaho Code § 36-402.

prevent incidental capture of Canada lynx, and moreover, they are merely advisory and lack full enforcement capability by IDFG.<sup>29</sup>

## II. FACTUAL BACKGROUND

### A. Canada Lynx

The Canada lynx is a rare member of the cat family, *Felidae*, similar to bobcat but characterized by tufted ears, long legs, and large paws. It is a cold-loving cat that feeds predominantly on snowshoe hares.

Canada lynx once inhabited large areas of at least 16 states in the contiguous United States, but the species has since been extirpated from significant portions of its historical range. Declining population numbers and inadequate regulatory mechanisms led FWS to list Canada lynx as a threatened species under the ESA in 2000.<sup>30</sup> However, trapping, as well as habitat destruction, climate change, and other threats, continues to harm the Canada lynx today.

In Idaho, Canada lynx are known to occupy much of the State, with “populations occur[ring] north of the Salmon River in the west, and north of the Caribou Range in the east.”<sup>31</sup> Information from FWS shows the Canada lynx is known to or is believed to occur in 27 of Idaho’s 44 counties.<sup>32</sup>

The total number of Canada lynx in Idaho is precariously low, estimated at as few as 100 individuals; the loss of just a few animals could have dire genetic consequences for the species in the State and across the American West.<sup>33</sup> Lynx habitat in Idaho is crucial, as “lynx disperse in both directions across the Canada-U.S. border, and this connectivity and interchange with lynx populations in Canada is thought to be essential to the maintenance and persistence of lynx populations in the contiguous United States.”<sup>34</sup> For example, the

---

<sup>29</sup> IDFG, *2014-2015 Upland Game, Furbearer and Turkey Seasons and Rules* at 43.

<sup>30</sup> 65 Fed. Reg. 16,052 (Mar. 24, 2000). FWS has promulgated an ESA section 4(d) rule that applies all the prohibitions in section 9 of the ESA to wild populations of lynx. 50 C.F.R. § 17.40(k).

<sup>31</sup> See IDFG, *Profile on Canada Lynx* (2005), <http://fishandgame.idaho.gov/ifwis/cwcs/pdf/Canada%20Lynx.pdf> (citing McKelvey, K.S., K.B. Aubry, and Y.K. Ortega. 2000. History and distribution of lynx in the contiguous United States. Pages 207-264 in Ecology and conservation of lynx in the United States. USDA Forest Service General Technical Report RMRS-GTR-30WWW).

<sup>32</sup> FWS, *U.S. Counties in which the Canada Lynx (Contiguous U.S. DPS) is known to or is believed to occur* (undated), <http://ecos.fws.gov/speciesProfile/profile/countiesBySpecies.action;jsessionid=758AC9290C95536895BBE5DD5FBCCC0D67d-49653-s=1&entityId=24&d-49653-o=2&d-49653-p=1>.

<sup>33</sup> *Id.*; IDFG, *Profile on Canada Lynx*, *supra* note 31.

<sup>34</sup> 78 Fed. Reg. 59430, 59434 (Sep. 26, 2013) (to be codified at 50 C.F.R. Part 17) (internal citations omitted); see also Ruediger, Bill, *et al.* 2000. Canada lynx conservation assessment and strategy. Forest Service Publication #R1-00-53, Missoula, MT. 142 pp.

northwestern corner of the Idaho Panhandle is connected to the Salmon Priest lynx recovery management zone in Washington, with lynx capable of long-distance dispersion. Hence, maintaining healthy numbers of Canada lynx in Idaho is critical to Canada lynx conservation throughout the contiguous United States.

#### B. Canada Lynx Trapping

Lawful trapping of Canada lynx ended in Idaho in 1997, but the State continues to authorize trapping for bobcats, fishers, martens, coyotes, wolves, and other species within lynx habitat. State regulations permit the use of all types of traps – including leg-hold traps, conibear (body-crushing) traps, and snares that are known to catch Canada lynx – and allow traps to remain unattended for up to three days. Three cases of non-target trapping of Canada lynx have been documented in Idaho in the last two years. It is clear that the authorization of trapping in this manner in Idaho causes take of Canada lynx. And as discussed below, the number of trapping licenses issued is skyrocketing, meaning future take is bound to escalate.

On January 26, 2012, a third-party recreationist found a Canada lynx caught in a foot-hold “long spring trap with offset jaws, multiple swivels, on a drag with six foot chain” in the Salmon-Challis National Forest – the first confirmed sighting of a lynx in that area in more than 20 years.<sup>35</sup> Fortunately, the recreationist immediately reported the incident to the State, and the lynx reportedly was released without visible signs of injury, although whether it was able to recover from the stress of the experience is unknown. A subsequent DNA analysis showed the trapped animal was a male Canada lynx that did not match any individuals in the lynx DNA database.<sup>36</sup>

Less than a year later, a trapper reported that he had killed a Canada lynx caught in a leg-hold trap while trapping bobcats in Boundary County.<sup>37</sup> The State’s wildlife officer reported that the trapper was licensed by the State, and that the trapper shot and killed the lynx after mistaking it for a bobcat.<sup>38</sup> A necropsy report found it was a juvenile female Canada lynx.<sup>39</sup>

Trappers reported another lynx caught in a trapline in Idaho’s Cabinet Mountain range on January 29, 2014.<sup>40</sup> A State biologist drugged, tagged, and placed a radio-tracking collar on the lynx, the first lynx being tracked as part of a new project to study lynx and wolverine.

---

<sup>35</sup> Idaho Conservation Data Center, *Rare Animal Observation Report Form* (Jan. 26, 2012).

<sup>36</sup> Pilgrim, K. and Schwartz, M., *USFS Rocky Mountain Research Station Report* (Feb. 8, 2012).

<sup>37</sup> IDFG, *Misdemeanor Citation Report* (Jan. 2, 2013).

<sup>38</sup> *Id.*

<sup>39</sup> IDFG, *Preliminary Laboratory Report* (Feb. 11, 2013).

<sup>40</sup> IDFG, *Lynx Captured in West Cabinet Mountains* (Feb. 4, 2014), <https://fishandgame.idaho.gov/content/post/lynx-captured-west-cabinet-mountains>).

The female lynx was reportedly uninjured by the trap, but only time will tell if she survives the ordeal.

These are the only documented cases in which Canada lynx were trapped in Idaho in recent years, but it would strain credulity to believe that no additional trappings have occurred. State regulations only require a trapper to report non-target catch when the caught animal has died in the trap.<sup>41</sup> This year's non-target catch totals have not yet been reported, and live caught animals need not be reported. Beyond this gap in information, and given the substantial price paid for lynx pelts just across the border in Canada, there is substantial reason to believe that at least some dead trapped lynx are not reported.

Indeed, FWS noted concerns with unreported Canada lynx trapping when it listed the species under the ESA, stating:

We know that lynx are taken during legal trapping and hunting for other species, such as wolverine and bobcat, even when lynx seasons are closed. We do not know how many lynx may be purposefully poached, but are concerned about radio-collared lynx that have been killed but not reported. No reliable recordkeeping exists to determine how frequently such taking occurs, nor if it has increased because of the increasing accessibility of forests.<sup>42</sup>

Moreover, a joint report from the Bureau of Land Management ("BLM") and FWS describes incidental trapping of lynx as "fairly common" in Idaho.<sup>43</sup> To develop the report, the two agencies interviewed more than 75 trappers and other individuals who are familiar with lynx and its habitat, compiling "the best available [information] on where Canada lynx lived and how they survived in Idaho." The federal agencies concluded that "[m]any Canada lynx have been trapped incidentally while targeting bobcat and coyotes," and they name incidental trapping as one of the major factors to blame for lynx decline in the State. The report documents the extent of trapping in the 1990s, when it was far less prevalent than it has become today. Incidental trapping has undoubtedly increased with the huge increase in recreational trapping in Idaho in the last two decades.

The absence of reported take of Canada lynx could well be because trappers are concerned about liability for take and hence do not report it. It is unclear whether the lynx trapped in the Salmon-Challis National Forest in 2012 would have been reported if the trapper had gotten to the animal before a third party. After this lynx was trapped, a representative from

---

<sup>41</sup> IDAPA 13.01.16 (200.03)(a) and (b). However, this regulation is inconsistent with the statute on which it is based. Idaho Code § 36-1105. The statute requires the reporting of animals "caught, killed and pelted," while the State only requires reporting of animals killed and pelted. The State's "Furtaker Harvest Report" form, which cites to IDAPA 13, asks furtakers to report both live and dead non-target catch totals. Hence, trappers who do not report live catch totals are out of compliance with the statute.

<sup>42</sup> 65 Fed. Reg. 16,052, 16,080 (Mar. 24, 2000) (internal citations omitted).

<sup>43</sup> Lewis, L. & Wenger, C.R., Idaho's Canada Lynx: Pieces of the Puzzle, *Idaho Bureau of Land Management Technical Bulletin No. 98-11* (1998).

the Idaho Trappers Association argued that FWS should require the State to obtain an ITP, as “there is no protection” currently from liability under the ESA for trappers “who might unintentionally catch a lynx and report it to IDFG.”<sup>44</sup> Since no ITP exists for trapping in Idaho, the trapper pointed out that failing to prevent unpermitted take would “send a very loud message to Idaho trappers to simply not report any incidentally captured lynx” if FWS pursued legal action against the trapper who caught a Canada lynx in the Salmon-Challis National Forest in 2012.<sup>45</sup>

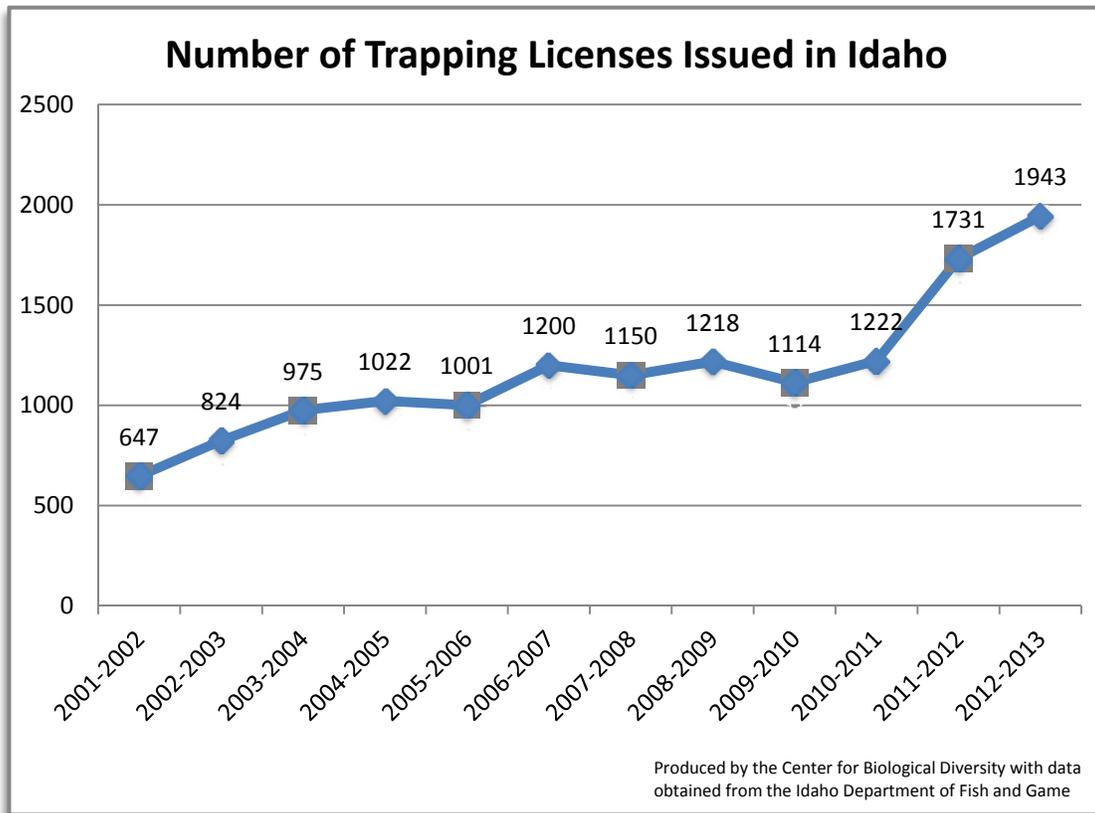
The BLM and FWS joint report also warned that “incidental trapping remains a problem ... when Canada lynx populations are so critically low.”<sup>46</sup> The agencies made this finding even though they believed incidental trapping was “less of an issue” at that time, a conclusion based on three mitigating factors: (1) fur prices were low; (2) there were minimal trapping efforts; and (3) a complete closure of Canada lynx trapping was in effect when the report was issued. However, since 1998, fur prices have skyrocketed and trapping is far more widespread, elevating these concerns to a much higher level today.

---

<sup>44</sup> Email from Mark Collinge, Idaho Trappers Association, to Brian Kelly, IDFG (Feb. 1, 2012, 11:11 MST) [hereinafter “Collinge Email”].

<sup>45</sup> This quoted trapper works for Wildlife Services, a federal agency within the U.S. Department of Agriculture that sought and obtained an ITP for its trapping program in Idaho after catching a Canada lynx. In communication to FWS and the State, he pointed out that “[t]he risk of Wildlife Services unintentionally trapping a lynx is arguably much lower than the risk of a private bobcat trapper capturing a lynx in Idaho,” and noted that “Wildlife Services rarely tries to intentionally capture bobcats, but with the current high prices being paid for bobcats, there are likely hundreds of traps and snares being set for bobcats by Idaho fur trappers.” Collinge Email (*supra* note 44).

<sup>46</sup> See also Lynx Biology Team, Lynx Conservation Assessment and Strategy (Jan. 2000) at 28 (“At low population levels, or in situations where reproduction or recruitment are low, trapping mortality can be additive and lead to population declines.”)



The number of trapping licenses the State has issued climbed exponentially in recent years, with the number of trapping licenses tripling in the dozen years since the lynx was protected under the ESA and doubling in just the last three years alone.<sup>47</sup> This correlates with an increase in fur prices and fur sales, which reached record levels in 2012 largely due to increased demand for fur in places like China.<sup>48</sup> In Idaho, fur prices averaged \$302 for 62 bobcat pelts and \$29 for 424 coyote pelts trapped and sold in Idaho eight years ago, compared with \$532 for 135 bobcat pelts and \$40 for 668 coyote pelts trapped and sold in Idaho in 2013.<sup>49</sup> A recent report has suggested that bobcat pelt prices have increased ten-fold in just four years, this year reaching near \$2,000 for each bobcat sold.<sup>50</sup>

The number of total trapping licenses has increased even further since the State authorized wolf trapping in 2011, with the number of licenses jumping nearly 60 percent in just two

<sup>47</sup> “The Number of Idaho Fur Trappers Doubles as Pelt Prices Soar,” Boise State Public Radio (Mar. 24, 2014), <http://boisestatepublicradio.org/post/number-idaho-fur-trappers-doubles-pelt-prices-soar>.

<sup>48</sup> Fur Harvesters Auction Inc., *FHA concludes record year with June 18<sup>th</sup> auction results* (June 18, 2013), <http://www.furharvesters.com/results/2013/June/june13us.pdf>.

<sup>49</sup> Idaho Trappers Association, *Fur Sale Archives* (Mar. 2013), <http://www.idahotrappersassociation.com/archives.html>.

<sup>50</sup> “The Number of Idaho Fur Trappers Doubles as Pelt Prices Soar,” *supra* note 47.

years.<sup>51</sup> Wolf trapping is now authorized within Canada lynx habitat, and the season – running from as early as October 1 to March 31 – coincides with a time in which lynx family groups may be particularly vulnerable to trapping.<sup>52</sup>

### III. THE STATE IS LIABLE FOR TAKE

Governor Otter has ultimate authority for the direction of all executive agencies in his state, including IDFG. IDFG, under Director Moore, issues all licenses for recreational trapping throughout Idaho. The Director is also responsible for enforcing any limitations on trapping, such as seasonal restrictions and reporting requirements, and can rescind trapping licenses. The Commissioners of the Idaho Fish and Wildlife Commission have the authority to and have determined when, where, how, and in what number wildlife species can be taken in Idaho. These individuals authorize widespread recreational trapping with very few restrictions overall and no restrictions designed to prevent incidental take of lynx.

Recreational trapping in Idaho causes take of Canada lynx by resulting in the death, harassment, and harm of individual lynx. Trapping causes or leads to the direct mortality of the animals that are caught, as made evident by the death of a Canada lynx in Boundary County in 2013. Indeed, trapping is defined under the ESA as a form of take.<sup>53</sup>

Additionally, even if released alive, the temporary immobility of individual lynx constitutes a “take” in the form of harassment, as it causes adverse physiological responses in trapped and struggling animals, including anxiety, stress, and pain that change hormone, enzyme, and electrolyte levels as well as muscle pH.<sup>54</sup> “When prolonged, this distress can have a deleterious effect on an animal’s health and subsequent survival” after it is released.<sup>55</sup> Moreover, after being caught in a trap for up to three-days, a Canada lynx may not survive even if released alive. Damage from snares and traps can reduce mobility and survivorship of animals due to injury, limping, and tissue necrosis that may take days to appear, or an inability to catch prey due to broken teeth or claw loss.<sup>56</sup> “Because yearling lynxes are dependent on their mothers for survival, mortality may increase if their mothers are trapped.”<sup>57</sup> Orphaned kittens may die of starvation, especially when newborn or if their

---

<sup>51</sup> IDFG, *Trapper Education and Trap Awareness for Conservation Officers* (undated PowerPoint presentation) (showing 647 trapping licenses were sold in 2001-2001, 1,222 were sold in 2011, 1,731 were sold in 2012, and 1,943 were sold at the time the information was compiled in 2013).

<sup>52</sup> Ulev, E. 2007. *Lynx canadensis*, in Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer) (Mar. 28, 2014), <http://www.fs.fed.us/database/feis/animals/mammal/lyca/all.html>.

<sup>53</sup> 16 U.S.C. § 1532(19).

<sup>54</sup> Iossa et al. *Mammal Trapping: A review of animal welfare standards of killing and restraining traps*, 16 *Animal Welfare* 345 (2007).

<sup>55</sup> Iossa et al. *Mammal Trapping: A review of animal welfare standards of killing and restraining traps*, 16 *Animal Welfare* 345 (2007).

<sup>56</sup> *Id.*

<sup>57</sup> Ulev, Elena 2007, *supra* note 52.

mothers are trapped “[d]uring periods of prey scarcity.”<sup>58</sup> Experts recommend “restricting trapping during early winter to avoid removing adult females from their kittens.”<sup>59</sup> Hence, animals may die even when trappers release lynx from their traps, but because current regulations do not require it, such take may never be reported.

Recreational trapping in Idaho has now resulted in three known instances of trapping and harassment in the last two years, including one that is known to have resulted in the death of a lynx, and experts believe it is highly likely that additional instances of take are also occurring. Hence, the State’s licensing of recreational wildlife trapping in Idaho is causing and will continue to cause incidental take of threatened Canada lynx and is a violation of sections 9 and 4(d) and 50 C.F.R. § 17.40(k). The individuals to whom this notice is addressed have the authority to stop such take.

Until the State either ends trapping that can result in the incidental take of Canada lynx in Idaho or obtains an HCP and ITP that mitigate impacts to the maximum extent practicable, the State is in violation of sections 9 and 4(d) of the ESA, and 50 C.F.R. § 17.40(k). Several states have obtained or are considering obtaining ITPs and HCPs to legally allow incidental take of lynx that result from trapping regulations and programs in their states. We encourage Idaho to work with these states and FWS to develop an HCP and ITP for Idaho that will protect this magnificent imperiled species.

#### IV. CONCLUSION

Despite its responsibility to regulate trapping in a manner consistent with the ESA, the State is permitting trapping that results in take of listed Canada lynx. The State is aware of at least three recent documented cases of take that have occurred, and FWS has made clear that trapping is an ongoing threat to the species, but the State has nevertheless failed to take action to prevent future take from occurring. Meanwhile, the State has significantly ramped up the number of recreational trapping licenses it is issuing at a time when the price of bobcat pelts is skyrocketing, thereby increasing threats to Canada lynx.

We urge the State to take action to prevent future unlawful take from occurring, while pursuing authorization for incidental take under the ESA. If you fail to remedy these violations within the next 60 days, however, we may pursue injunctive, declaratory, or other relief that is available under the law. We may also seek an award for any costs and fees associated with this litigation, including reasonable attorney and expert fees.

Please do not hesitate to contact us if you would like to discuss this matter or have any questions about this notice. Thank you for your consideration of this important matter.

---

<sup>58</sup> *Id.*

<sup>59</sup> *Id.*

Sincerely,



Louisa Willcox  
Northern Rockies Representative  
CENTER FOR BIOLOGICAL DIVERSITY  
P.O. Box 2406  
Livingston, MT 59047  
(406) 224-2250  
lwillcox@biologicaldiversity.org



Gary Macfarlane  
Ecosystem Defense Director  
FRIENDS OF THE CLEARWATER  
PO Box 9241  
Moscow, ID 83843  
(208) 882-9755  
gary@friendsoftheclearwater.org



Kenneth Cole  
NEPA Coordinator  
WESTERN WATERSHEDS PROJECT  
P.O. Box 2863  
Boise, ID 83701  
(208) 890-3666  
ken@westernwatersheds.org

cc: Sally Jewell, Secretary  
U.S. Department of the Interior  
1849 C. Street NW  
Washington, D.C. 20240

A. Montana trapping regulation excerpts re: incidental take of lynx. From 2012 Montana Hunting and Trapping Regulations – Furbearer (<http://fwp.mt.gov/fwpDoc.html?id=56843>).

1. General Trapping Regulations - Trap checking:

“Checking and Placing Traps – Traps **should** be checked at least once every 48 hours. It is the trapper’s responsibility to check his/her traps **regularly** (emphasis added). Failure to pick up traps or snares at the end of the trapping season or attending them in a manner that waste furbearing animals constitutes a misdemeanor per Montana law.”

Note: 48-hour trap check is a recommendation, not a mandatory requirement (therefore not enforceable unless “waste” of a furbearing animal can be demonstrated). 48-hour trap check is a requirement only for wolf trapping (see below).

2. Special Bobcat Regulation:

“Special Bobcat Regulations in Trapping Districts 1 and 2 – To minimize the incidental capture of lynx the following special bobcat regulations apply in a portion of Trapping Districts 1 and 2: Bobcat Snares – Non-relaxing snares are prohibited in all bobcat sets. See legal descriptions, page 9.”

Note: Only addresses snares. No special regulation to prevent take of lynx in foothold traps set for bobcat – though such incidental take is covered by the CITES consultation and BO (up to the limit provided in the BO – 2 lynx killed and 2 injured annually DPS-wide).

3. Special Marten Regulation:

“Special Marten Regulations in Trapping Districts 1 and 2 – To minimize the incidental capture of lynx the following special marten regulations apply in a portion of Trapping Districts 1 and 2: Leaning Pole Sets – Pole diameter must be no larger than 4 inches for pole sets with trap and bait 48 inches above the ground. See legal description, page 9.”

4. Special Fisher Regulation:

“Special Fisher Regulations in Trapping Districts 1 and 2 – To minimize the incidental capture of lynx the following special fisher regulations apply in a portion of Trapping Districts 1 and 2: Leaning Pole Sets – Pole diameter must be no larger than 4 inches for pole sets with trap and bait 48 inches above the ground. See legal descriptions, page 9.

5. Special Wolverine Regulation:

“Special Wolverine Regulations in Trapping Districts 1 and 2 – To minimize the incidental capture of lynx the following special wolverine regulations apply in a portion of Trapping Districts 1 and 2: Leaning Pole Sets – Pole diameter must be no larger than 4 inches for pole sets with trap and bait 48 inches above the ground. See legal descriptions, page 9.”

Note: Marten, Fisher and Wolverine Special Regulations are identical and only address leaning pole sets. It is unclear if these are the only legal sets for these species or if other sets are legal for these species but do not include measures to reduce potential for incidental take of lynx.

#### 6. Lynx:

“LYNX – CLOSED SEASON. Lynx are protected by Federal law under the Endangered Species Act. Avoid placing sets that might attract lynx. Accidentally trapped lynx that are uninjured must be released immediately and the incident must be reported to a designated Fish, Wildlife & Parks employee within five (5) days of release.”

“Incidental Take – Trappers who accidentally capture a furbearer when the season is closed or trapper limit is met must notify a designated Fish, Wildlife & Parks employee residing in the trapping district where the animal was taken within 24 hours to arrange collection of the animal if the animal cannot be released uninjured. It is unlawful for any person to retain possession of an incidentally taken furbearer as per Montana law.”

#### 7. Legal description of parts of Trapping Districts 1 and 2 to which special bobcat, marten, fisher and wolverine regulations apply:

“Portion of Trapping Districts 1 and 2 for Special Bobcat, Marten, Fisher and Wolverine Regulations - Those portions of Trapping Districts 1 and 2 within the following described boundary: From the intersection of US Highway 2 with the Montana-Idaho state line then south and east along US Highway 2 to its intersection with US Highway 93 at Kalispell then southerly along US Highway 93 to its intersection with Interstate 90 then southeasterly along Interstate 90 to its intersection with US Highway 12 at Garrison then easterly along US Highway 12 to its intersection with the Continental Divide at McDonald Pass then northerly along the Continental Divide to its intersection with the Glacier National Park boundary at Marias Pass then westerly and northerly along the Glacier National Park boundary to the US-Canada border then west along said border to its intersection with the Montana-Idaho state line then south along said line to its intersection with US Highway 2 the point of beginning.”

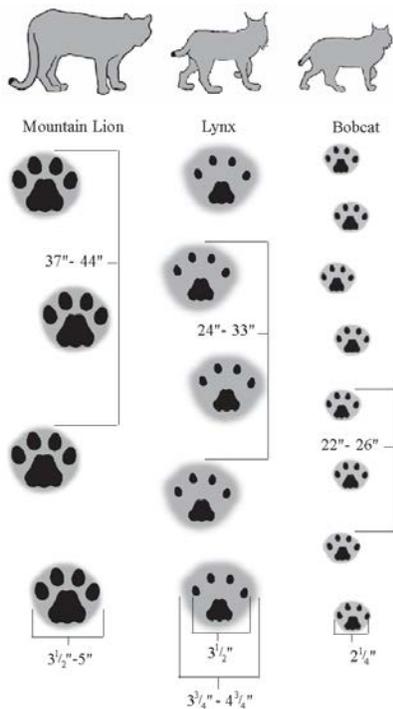
#### 8. General recommendations for avoiding capture of non-target species:

“General Information - Methods for Improving Efficiency, Selectivity and Animal Welfare

- Use pan tension devices to avoid non-target catches.
- Use extra swivels and center-mounted chains to hold more animals and reduce the chance of injuries occurring.
- Use modern positioning techniques at dirt hole sets to increase selectivity.
- Use short trap chains for most land sets and especially those targeted for fox and coyote.
- Use guarded “stop-loss” traps for muskrats in shallow water or dry land sets.

- Use dispatching methods that are quick and humane.
- Use trap sizes that are appropriate for the target species—foot pad catches are desirable for fox, coyote, raccoon, and most other animals because they cause fewer injuries.
- Use baits and lures that attract target species but not other animals.
- Use cage, box or species-specific traps near barns, outbuildings, and other locations where domestic animals may be present.
- Use common sense in choosing set locations that maximize opportunities to catch target species and minimize opportunities to catch other animals.
- Use secure methods of attaching traps—tailor methods to hold the largest species you may catch.
- Use traps with laminated jaws where the risk of non-target catches is high.
- Use discretion and select trap site placement carefully when setting body-gripping traps.
- Use time to your advantage—do not set more traps than you can handle.
- Use early morning trap checks to reduce the time an animal is held, reduce its chances of pulling out, and avoid theft of traps and animals.”

9. Cat Identification: “Field identification characteristics of mountain lion, lynx, and bobcat —physical markings and tracks in the snow (Montana Fish, Wildlife & Parks, 1999).”



- Note differences in tail length of lion and black markings on tip of lynx and bobcat tail.
- Lynx ear tufts are longer than bobcat ear tufts.
- Lion and lynx foot sizes are similar; bobcat is much smaller.
- Tracks are shown with shaded area representing impression of hair in the snow.
- Note track size and stride length differences between species.

B. Wolf Trapping Regulations - From 2012 Montana Hunting and Trapping Regulations – Wolf (<http://fwp.mt.gov/fwpDoc.html?id=56685>).

1. “Checking and Placing Traps – Traps are **required to be visually checked at least once every 48 hours**. Failure to pick up traps at the end of the trapping season or attending them in a manner that wastes animals constitutes a misdemeanor per Montana law.”

Note: 48-hour trap check is **required** only for wolf trapping, not for other (furbearer) trapping.

2. “Trapping Equipment Requirements – Foot-hold traps are legal methods during the wolf trapping season. The inside jaw spread of foothold traps must not exceed nine inches. Conibears or snares may not be used to take wolves.”

Note: The jaw-spread regulation appears to be a measure to protect livestock? Could apply to large bears, perhaps, but they should be in dens during the Dec. 15 – Feb. 28 wolf trapping season. The restriction on Conibear traps and snares may be protective of lynx (reduce the chance for incidental mortality [i.e., more likely that lynx could be released unharmed from a foothold trap than from a snare – even a “relaxing snare”?; no opportunity for release unharmed from Conibear]).

3. “Non-Target Species – Incidental captures of non-target wildlife such as protected birds or mammals, that cannot be legally possessed and that are uninjured, shall be released immediately on site and immediately reported to an FWP Regional Office. Trappers that incidentally capture protected animals that cannot be legally possessed and that cannot be released uninjured, must immediately notify a designated Fish, Wildlife & Parks employee or an FWP regional office, to determine disposition and/or collection of the animal.”

Note: Not specific to lynx, and lynx and avoiding incidental take of them are not specifically addressed elsewhere in the wolf trapping regulations.

**Addendum 12-17-2012:** On 11-8-2012 the MFWP Commission adopted a new wolf-trapping regulation mandating a minimum 8-lb. pan tension to minimize non-target captures of small carnivores including lynx, marten and fisher.

A. Montana trapping regulation excerpts re: incidental take of lynx. From 2012 Montana Hunting and Trapping Regulations – Furbearer (<http://fwp.mt.gov/fwpDoc.html?id=56843>).

1. General Trapping Regulations - Trap checking:

“Checking and Placing Traps – Traps **should** be checked at least once every 48 hours. It is the trapper’s responsibility to check his/her traps **regularly** (emphasis added). Failure to pick up traps or snares at the end of the trapping season or attending them in a manner that waste furbearing animals constitutes a misdemeanor per Montana law.”

Note: 48-hour trap check is a recommendation, not a mandatory requirement (therefore not enforceable unless “waste” of a furbearing animal can be demonstrated). 48-hour trap check is a requirement only for wolf trapping (see below).

2. Special Bobcat Regulation:

“Special Bobcat Regulations in Trapping Districts 1 and 2 – To minimize the incidental capture of lynx the following special bobcat regulations apply in a portion of Trapping Districts 1 and 2: Bobcat Snares – Non-relaxing snares are prohibited in all bobcat sets. See legal descriptions, page 9.”

Note: Only addresses snares. No special regulation to prevent take of lynx in foothold traps set for bobcat – though such incidental take is covered by the CITES consultation and BO (up to the limit provided in the BO – 2 lynx killed and 2 injured annually DPS-wide).

3. Special Marten Regulation:

“Special Marten Regulations in Trapping Districts 1 and 2 – To minimize the incidental capture of lynx the following special marten regulations apply in a portion of Trapping Districts 1 and 2: Leaning Pole Sets – Pole diameter must be no larger than 4 inches for pole sets with trap and bait 48 inches above the ground. See legal description, page 9.”

4. Special Fisher Regulation:

“Special Fisher Regulations in Trapping Districts 1 and 2 – To minimize the incidental capture of lynx the following special fisher regulations apply in a portion of Trapping Districts 1 and 2: Leaning Pole Sets – Pole diameter must be no larger than 4 inches for pole sets with trap and bait 48 inches above the ground. See legal descriptions, page 9.

5. Special Wolverine Regulation:

“Special Wolverine Regulations in Trapping Districts 1 and 2 – To minimize the incidental capture of lynx the following special wolverine regulations apply in a portion of Trapping Districts 1 and 2: Leaning Pole Sets – Pole diameter must be no larger than 4 inches for pole sets with trap and bait 48 inches above the ground. See legal descriptions, page 9.”

Note: Marten, Fisher and Wolverine Special Regulations are identical and only address leaning pole sets. It is unclear if these are the only legal sets for these species or if other sets are legal for these species but do not include measures to reduce potential for incidental take of lynx.

6. Lynx:

“LYNX – CLOSED SEASON. Lynx are protected by Federal law under the Endangered Species Act. Avoid placing sets that might attract lynx. Accidentally trapped lynx that are uninjured must be released immediately and the incident must be reported to a designated Fish, Wildlife & Parks employee within five (5) days of release.”

“Incidental Take – Trappers who accidentally capture a furbearer when the season is closed or trapper limit is met must notify a designated Fish, Wildlife & Parks employee residing in the trapping district where the animal was taken within 24 hours to arrange collection of the animal if the animal cannot be released uninjured. It is unlawful for any person to retain possession of an incidentally taken furbearer as per Montana law.”

7. Legal description of parts of Trapping Districts 1 and 2 to which special bobcat, marten, fisher and wolverine regulations apply:

“Portion of Trapping Districts 1 and 2 for Special Bobcat, Marten, Fisher and Wolverine Regulations - Those portions of Trapping Districts 1 and 2 within the following described boundary: From the intersection of US Highway 2 with the Montana-Idaho state line then south and east along US Highway 2 to its intersection with US Highway 93 at Kalispell then southerly along US Highway 93 to its intersection with Interstate 90 then southeasterly along Interstate 90 to its intersection with US Highway 12 at Garrison then easterly along US Highway 12 to its intersection with the Continental Divide at McDonald Pass then northerly along the Continental Divide to its intersection with the Glacier National Park boundary at Marias Pass then westerly and northerly along the Glacier National Park boundary to the US-Canada border then west along said border to its intersection with the Montana-Idaho state line then south along said line to its intersection with US Highway 2 the point of beginning.”

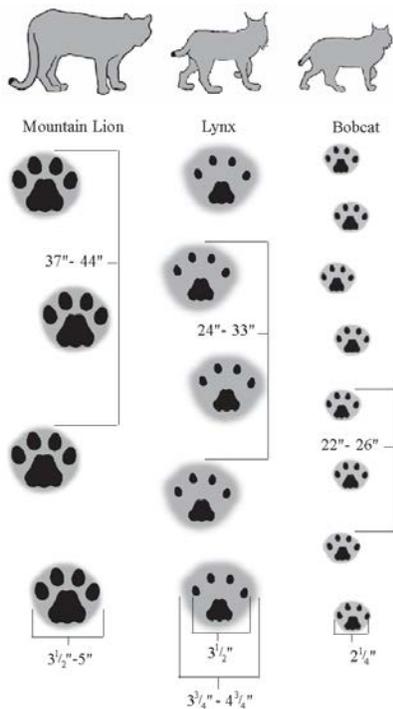
8. General recommendations for avoiding capture of non-target species:

“General Information - Methods for Improving Efficiency, Selectivity and Animal Welfare

- Use pan tension devices to avoid non-target catches.
- Use extra swivels and center-mounted chains to hold more animals and reduce the chance of injuries occurring.
- Use modern positioning techniques at dirt hole sets to increase selectivity.
- Use short trap chains for most land sets and especially those targeted for fox and coyote.
- Use guarded “stop-loss” traps for muskrats in shallow water or dry land sets.

- Use dispatching methods that are quick and humane.
- Use trap sizes that are appropriate for the target species—foot pad catches are desirable for fox, coyote, raccoon, and most other animals because they cause fewer injuries.
- Use baits and lures that attract target species but not other animals.
- Use cage, box or species-specific traps near barns, outbuildings, and other locations where domestic animals may be present.
- Use common sense in choosing set locations that maximize opportunities to catch target species and minimize opportunities to catch other animals.
- Use secure methods of attaching traps—tailor methods to hold the largest species you may catch.
- Use traps with laminated jaws where the risk of non-target catches is high.
- Use discretion and select trap site placement carefully when setting body-gripping traps.
- Use time to your advantage—do not set more traps than you can handle.
- Use early morning trap checks to reduce the time an animal is held, reduce its chances of pulling out, and avoid theft of traps and animals.”

9. Cat Identification: “Field identification characteristics of mountain lion, lynx, and bobcat —physical markings and tracks in the snow (Montana Fish, Wildlife & Parks, 1999).”



- Note differences in tail length of lion and black markings on tip of lynx and bobcat tail.
- Lynx ear tufts are longer than bobcat ear tufts.
- Lion and lynx foot sizes are similar; bobcat is much smaller.
- Tracks are shown with shaded area representing impression of hair in the snow.
- Note track size and stride length differences between species.

B. Wolf Trapping Regulations - From 2012 Montana Hunting and Trapping Regulations – Wolf (<http://fwp.mt.gov/fwpDoc.html?id=56685>).

1. “Checking and Placing Traps – Traps are **required to be visually checked at least once every 48 hours**. Failure to pick up traps at the end of the trapping season or attending them in a manner that wastes animals constitutes a misdemeanor per Montana law.”

Note: 48-hour trap check is **required** only for wolf trapping, not for other (furbearer) trapping.

2. “Trapping Equipment Requirements – Foot-hold traps are legal methods during the wolf trapping season. The inside jaw spread of foothold traps must not exceed nine inches. Conibears or snares may not be used to take wolves.”

Note: The jaw-spread regulation appears to be a measure to protect livestock? Could apply to large bears, perhaps, but they should be in dens during the Dec. 15 – Feb. 28 wolf trapping season. The restriction on Conibear traps and snares may be protective of lynx (reduce the chance for incidental mortality [i.e., more likely that lynx could be released unharmed from a foothold trap than from a snare – even a “relaxing snare”?; no opportunity for release unharmed from Conibear]).

3. “Non-Target Species – Incidental captures of non-target wildlife such as protected birds or mammals, that cannot be legally possessed and that are uninjured, shall be released immediately on site and immediately reported to an FWP Regional Office. Trappers that incidentally capture protected animals that cannot be legally possessed and that cannot be released uninjured, must immediately notify a designated Fish, Wildlife & Parks employee or an FWP regional office, to determine disposition and/or collection of the animal.”

Note: Not specific to lynx, and lynx and avoiding incidental take of them are not specifically addressed elsewhere in the wolf trapping regulations.