

**To:** Miller, Mark[memiller@blm.gov]  
**Cc:** Wendy Loya[wendy\_loya@fws.gov]; Sara Longan[sara.longan@alaska.gov]; Paul Leonard[paul\_leonard@fws.gov]; Jess Grunblatt[jgrunbla@alaska.edu]  
**From:** Sara Longan  
**Sent:** 2018-01-11T16:55:02-05:00  
**Importance:** Normal  
**Subject:** Re: More info for tomorrow's call NSSI-LCC workshop for north slope  
**Received:** 2018-01-11T16:55:51-05:00

Thank Mark.

Yes, it's initial - I would like to discuss, budget, timing, audience and logistics before the effort advances back to a larger group. It may get only take 30 mins

Thanks again

Sent from my iPhone

On Jan 11, 2018, at 12:17 PM, Miller, Mark <[memiller@blm.gov](mailto:memiller@blm.gov)> wrote:

Hi Wendy -

Sara is out today and I'm not sure whether she'll be able to respond before end of day. My sense of it is that this meeting is an initial discussion of timing and process.

Call-in information:

**65-CIP** Passcode **65-CIP**

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**Mark E. Miller, PhD | Deputy Director**  
**North Slope Science Initiative | <http://www.NorthSlopeScience.org>**  
Email: [memiller@blm.gov](mailto:memiller@blm.gov) | Office: 907-271-3212 | Mobile: 907-231-9427  
c/o Bureau of Land Management | Alaska State Office | State Director's Office  
222 West 7th Avenue, #13 | Anchorage, AK 99513

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"We are drowning in information, while starving for wisdom. The world henceforth will be run by synthesizers, people able to put together the right information at the right time, think critically about it, and make important choices wisely."

E. O. Wilson, *Consilience*

On Thu, Jan 11, 2018 at 12:11 PM, Wendy Loya <[wendy\\_loya@fws.gov](mailto:wendy_loya@fws.gov)> wrote:

Hi Sara,

I wanted to check in on our goals for tomorrow's call to see if we need to include John Martin and possibly Steve Berendzen or Joanna Fox from Arctic Refuge. I think the existing group is good if we are just scoping out the timing and process,

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which could include assembling a small interagency steering committee that can scope out the meeting. But if we are scoping the meeting tomorrow, we should probably include at least John Martin.

Let me know what you think. Also, if you can add a call in number to the meeting as we Paul is in Fbx or I can come by BLM to meet in person and he can call in....

Thanks!

Wendy

Dr. Wendy M. Loya, Coordinator

Arctic Landscape Conservation Cooperative (LCC)

Anchorage, Alaska

907.786.3532 (office)

907.227.2942 (mobile)

**To:** Leonard, Paul[paul\_leonard@fws.gov]; Frank Urban[furban@usgs.gov]; Sveta Stuefer[sveta.stuefer@alaska.edu]; Scott Lindsey - NOAA Federal[scott.lindsey@noaa.gov]; Hiemstra, Christopher A ERDC-RDE-CRREL-NH CIV[Christopher.A.Hiemstra@erdc.dren.mil]; Greta Burkart[greta\_burkart@fws.gov]; Rick.Thoman@noaa.gov[Rick.Thoman@noaa.gov]; Jorgenson, Janet[janet\_jorgenson@fws.gov]; Melissa Head[melissa.head@alaska.gov]; John Trawicki[john\_trawicki@fws.gov]  
**Cc:** Wendy Loya[wendy\_loya@fws.gov]  
**From:** Matthew Sturm  
**Sent:** 2018-02-09T13:25:30-05:00  
**Importance:** Normal  
**Subject:** Re: 1002 Climate / Snow Resource Assessment for your review  
**Received:** 2018-02-09T13:25:46-05:00

Looks good with one caveat: Remove the clause about "north-south" gradients in snow. Those exist in the Kuparuk but are subdued there.....and over in the 1002 area I doubt whether those are the critical gradients. Instead I suggest the issue is there are both "regional" and more local gradients, all of which will affect any activities that take place. Bottom line: we cannot delineate any of these gradients with current knowledge and data.

Matthew

On 2/6/18 5:51 PM, Leonard, Paul wrote:

Hello Snow and Climate Team!

Following guidance on format, length, and scope delivered to all the resource assessment team leads, I have attempted to capture your thoughts and input in the attached document. Please consider this a first draft. My hope is that you will have some time to review this very brief document and suggest changes to improve its depth and breadth while maintaining its existing structure. For those of you using Google docs (encouraged), feel free to make editing suggestions and provide any comments! If you do not wish to edit in using Google docs feel free to capture your comments in a word document and attach it to an email. I will close the online document for editing at COB on February 12th to allow time to incorporate your changes and follow up if necessary before the Feb. 16th deadline.

HOWEVER, this will not be your last chance to make comments, suggestions, or edits. I will be in communication with you regarding next steps after the assessments are collated.

I will be available via telephone (907.456.0445) or email this week if you have any concerns.

[https://docs.google.com/document/d/16grakHI6Srt5k3aAUGXe7KpxcfOUc0YWINrlaxGblhg/edit?usp\\_sharing](https://docs.google.com/document/d/16grakHI6Srt5k3aAUGXe7KpxcfOUc0YWINrlaxGblhg/edit?usp_sharing)

Thanks for all your effort.

Paul

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Paul Leonard, PhD  
Science Coordinator

Arctic LCC

101 12th Ave. Room 216

Fairbanks, AK 99701

(907) 456-0445

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Dr. Matthew Sturm  
Geophysical Institute  
University of Alaska-Fairbanks  
907-474-5257  
msturml@alaska.edu

**To:** Crane, Drew[drew\_crane@fws.gov]  
**Cc:** wendy\_loya@fws.gov[wendy\_loya@fws.gov]  
**From:** Kumle, Marta (DNR sponsored)  
**Sent:** 2018-04-19T20:30:28-04:00  
**Importance:** Normal  
**Subject:** RE: [EXTERNAL] Alaska Coastal Mapping Strategist  
**Received:** 2018-04-19T20:31:19-04:00

Thank you, Drew,

The only name I have on my distribution list from FWS is Karen Murphy who is the Western Alaska LLC Coordinator. We are always seeking more contacts and connections.

Cheers,

Marta Kumle, CH  
Coastal Mapping Strategist  
Alaska Ocean Observing System &  
AK Dept. of Natural Resources  
(907) 269-8729

**From:** Crane, Drew [mailto:drew\_crane@fws.gov]  
**Sent:** Thursday, April 19, 2018 4:05 PM  
**To:** Kumle, Marta (DNR sponsored) <marta.kumle@alaska.gov>  
**Cc:** wendy\_loya@fws.gov  
**Subject:** Re: [EXTERNAL] Alaska Coastal Mapping Strategist

Hi Marta,

Thank you for the email! I'll reach out to our acting NWI coordinator and my management to see what partnering/support opportunities related to the Coastal Plain and within our program exist. I may have an answer for you as early as next week, but it may be the week after that.

Thanks again,

Drew Crane  
Regional Endangered Species Coordinator  
Alaska Region  
U.S. Fish and Wildlife Service  
1011 E. Tudor Road  
Anchorage, AK 99503  
907-786-3323

On Wed, Apr 18, 2018 at 3:01 PM, Kumle, Marta (DNR sponsored) <[marta.kumle@alaska.gov](mailto:marta.kumle@alaska.gov)> wrote:  
Hello Wendy and Drew,

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Brian Wright sent me your email addresses in regards to the Arctic National Wildlife Refuge Coastal Plain program. I am working under the Alaska Geospatial Council to develop a Coastal Mapping Strategic Plan for Alaska including imagery and elevation data from lands that could be potentially flooded (sometimes more than a kilometer inshore) through the tidal zone and down to 30 meter water depth. We are seeking broad stakeholder input for mapping needs and input for the strategy.

In February we held the second Alaska Coastal Mapping Summit in Anchorage to bring stakeholders together and exchange ideas. The summit report will be finalized and distributed soon.

You can learn more about my role and the Alaska Geospatial Council's Coastal Strategy here: <http://agc.dnr.alaska.gov/coastal.html>. Please let me know if you have any coastal mapping needs and/or would like to be added to our distribution list. We are always looking for more ways to engage stakeholders so that we can better serve the coastal mapping community.

Cheers,

Marta Kumle, CH  
Coastal Mapping Strategist  
Alaska Ocean Observing System &  
AK Dept. of Natural Resources  
(907) 269-8729



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ssweet@blm.gov

Going? [Yes](#) [Maybe](#) [No](#) [more options »](#)

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 kpeck@blm.gov[kpeck@blm.gov]; lellis@blm.gov[lellis@blm.gov]; tmurphy@blm.gov[tmurphy@blm.gov];  
 mwhitman@blm.gov[mwhitman@blm.gov]; rkemnitz@blm.gov[rkemnitz@blm.gov];  
 rgoodwin@blm.gov[rgoodwin@blm.gov]; drew\_crane@fws.gov[drew\_crane@fws.gov];  
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 chillis@blm.gov[chillis@blm.gov]; rbrumbau@blm.gov[rbrumbau@blm.gov];  
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 kdebenham@blm.gov[kdebenham@blm.gov]; steve\_berendzen@fws.gov[steve\_berendzen@fws.gov];  
 sdallen@blm.gov[sdallen@blm.gov]; njones@blm.gov[njones@blm.gov];  
 sguyer@blm.gov[sguyer@blm.gov]; chamfler@blm.gov[chamfler@blm.gov];  
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 christopher\_putnam@fws.gov[christopher\_putnam@fws.gov]; mmccrum@blm.gov[mmccrum@blm.gov];  
 slamarr@blm.gov[slamarr@blm.gov]; ejulianus@blm.gov[ejulianus@blm.gov];  
 r2king@blm.gov[r2king@blm.gov]; wendy\_loya@fws.gov[wendy\_loya@fws.gov];  
 tracy\_fischbach@fws.gov[tracy\_fischbach@fws.gov]  
**From:** Google Calendar  
**Sent:** 2018-04-26T15:24:54-04:00  
**Importance:** Normal  
**Subject:** Updated invitation: SAVE THE DATE - COASTAL PLAIN EIS KICK-OFF & INTERNAL SC...  
 @ Thu 2018-05-03 08:30 - 16:30 (AKDT) (christopher\_putnam@fws.gov)  
**Received:** 2018-04-26T18:26:13-04:00

**This event has been changed.**

[more details »](#)

**SAVE THE DATE - COASTAL PLAIN EIS KICK-OFF & INTERNAL SCOPING**

We will get an agenda out in the next day or two so that you may be able to narrow down your time commitment to the time block in which we will be focused on your resource area. Stay tuned!

Thank you!

**When** Thu 2018-05-03 08:30 – 16:30 Alaska Time

**Where** **Changed:** BLM Alaska State Office- Denali Conference Room, 222 W. 7th Avenue ([map](#))

**Video call** [https://hangouts.google.com/hangouts/\\_/doi.gov/mnhayes](https://hangouts.google.com/hangouts/_/doi.gov/mnhayes)

**Calendar** christopher\_putnam@fws.gov

- Who**
- mnhayes@blm.gov organizer
  - craig.perham@boem.gov
  - dwixon@blm.gov
  - kpeck@blm.gov
  - lellis@blm.gov
  - tmurphy@blm.gov

- mwhitman@blm.gov
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- rgoodwin@blm.gov
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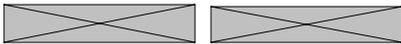
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**To:** Guyer, Scott[sguyer@blm.gov]  
**Cc:** Wendy Loya[Wendy\_loya@fws.gov]; Matt Macander[mmacander@abrinc.com]  
**From:** Aaron Wells  
**Sent:** 2018-05-22T10:53:45-04:00  
**Importance:** Normal  
**Subject:** Re: [EXTERNAL] ABR, Inc. statement of interested in working with USFWS in Alaska  
**Received:** 2018-05-22T10:54:30-04:00

Scott and Wendy, sounds good. I'll will meet you at 1011 E Tudor Rd at 9:00 am tomorrow, Wednesday May 23. Matt will be calling into the conference line you set up. I've also invited our co-worker JJ Frost.

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | [ABR Inc. Environmental Research and Services](#)  
1225 E. Intl. Airport Road #101 | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |



On Mon, May 21, 2018 at 4:16 PM, Guyer, Scott <[sguyer@blm.gov](mailto:sguyer@blm.gov)> wrote:

Aaron and Matt,

Lets meet at FWS Office at 1011 E Tudor Rd at 9 am on Wednesday. I have reserved a call in phone number if Matt is not in town or wants to call in.

BLM-AK SO Bridge **55 - CIP** Passcode **55 - CIP**

Scott

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

**From:** **Wendy Loya** <[Wendy\\_loya@fws.gov](mailto:Wendy_loya@fws.gov)>

**Date:** Mon, May 21, 2018 at 3:56 PM

**Subject:** RE: [EXTERNAL] ABR, Inc. statement of interested in working with USFWS in Alaska

**To:** Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)>, Scott Guyer <[sguyer@blm.gov](mailto:sguyer@blm.gov)>

**Cc:** Matt Macander <[mmacander@abrinc.com](mailto:mmacander@abrinc.com)>, JJ Frost <[jfrost@abrinc.com](mailto:jfrost@abrinc.com)>

If you can come to FWS at 1011 E Tudor Rd, that would be great! I have a room reserved. That would fit in best around the folks' here schedules...

Thanks!

wendy

0000009057

Dr. Wendy M. Loya, Coordinator  
Office of Science Applications -Arctic Program  
US Fish and Wildlife Service  
Anchorage, Alaska  
907.786.3532 (office)  
907.277.2942 (mobile)

**From:** Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)>  
**Sent:** Monday, May 21, 2018 3:45 PM  
**To:** Guyer, Scott <[sguyer@blm.gov](mailto:sguyer@blm.gov)>  
**Cc:** Wendy Loya <[Wendy\\_loya@fws.gov](mailto:Wendy_loya@fws.gov)>; Matt Macander <[mmacander@abrinc.com](mailto:mmacander@abrinc.com)>; JJ Frost <[jfrost@abrinc.com](mailto:jfrost@abrinc.com)>  
**Subject:** Re: [EXTERNAL] ABR, Inc. statement of interested in working with USFWS in Alaska

Scott and Wendy, yes, Wednesday morning at 9:00 am works for us. Where would you like to meet? Our conference room in our Anchorage office is available if you'd like to meet here. We are at 1225 E. Intl. Airport road. Otherwise I can meet you where ever works best for you both.

Aaron

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | ABR Inc. Environmental Research and Services  
1225 E. Intl. Airport Road #101 | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |

On Mon, May 21, 2018 at 3:30 PM, Guyer, Scott <[sguyer@blm.gov](mailto:sguyer@blm.gov)> wrote:

Aaron, Ok, great we are thinking Wednesday morning at 9 am does that work for you and Matt?

0000009058

Scott

On Mon, May 21, 2018 at 1:10 PM, Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)> wrote:

Scott, yes, I am available to provide a brief presentation describing ABRs land cover experience and methods in the arctic. I'd like to invite our remote sensing expert, Matt Macander, to the meeting as well.

I'm available this week and Monday of next week. After that I am at a lichen workshop in Anchorage and then I depart for field work to St. Matthew Island. I'll be back on June 16 to Anchorage and will be available for most the rest of June.

Aaron

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | ABR Inc. Environmental Research and Services  
1225 E. Intl. Airport Road #101 | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |

On Mon, May 21, 2018 at 8:22 AM, Guyer, Scott <[sguyer@blm.gov](mailto:sguyer@blm.gov)> wrote:

Hi Arron,

As Wendy has mentioned I will be assisting FWS with planning and evaluating land cover needs covering the 1002 and outlying areas within ANWR. Would you sometime in the near future be able to provide a brief presentation describing ABRs land cover experience and methods in the arctic? There might be an opportunity to also discuss other data collection as well, soils, NWI etc. Thanks!

Scott Guyer

Landscape Initiatives Coordinator

907-223-6759

0000009059

On Fri, May 18, 2018 at 10:51 AM, Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)> wrote:

Wendy, thank you for this update. I look forward to working with you and Scott moving forward. Should I continue with developing our ROM estimates as we discussed earlier this week?

Aaron

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | ABR Inc. Environmental Research and Services  
1225 E. Intl. Airport Road #101 | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |

On Fri, May 18, 2018 at 9:04 AM, Wendy Loya <[Wendy\\_loya@fws.gov](mailto:Wendy_loya@fws.gov)> wrote:

Hi Aaron,

Scott Guyer at BLM is going to help us with identifying the pathway forward on veg mapping, he will likely reach out to you for more information on our behalf. Future emails should include the 3 of us 😊

Thank you,

Wendy

Dr. Wendy M. Loya, Coordinator

Office of Science Applications -Arctic Program

US Fish and Wildlife Service

Anchorage, Alaska

907.786.3532 (office)

907.277.2942 (mobile)

**From:** Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)>  
**Sent:** Monday, May 14, 2018 12:16 PM  
**To:** Wendy Loya <[Wendy\\_loya@fws.gov](mailto:Wendy_loya@fws.gov)>  
**Subject:** Re: [EXTERNAL] ABR, Inc. statement of interested in working with USFWS in Alaska

Hi Wendy, Just following up with you on some action items from our phone call last Friday.

First, I followed up with our GIS team and we can perform all three of the tasks you are interested in for ANWR: landcover mapping, NHD mapping, and NWI mapping. We have experience on past projects in all of these areas.

Second, your question about the cost of the Selawik NWR ELS mapping that we did in parallel with the Arctic Network of National Parks back in 2005-2009. We looked into this but given the different objectives for ANWR (landcover mapping, NHD mapping, and NWI mapping) we don't think the costs for the Selawik work we did are a good comparison. So, we are working on preparing a Rough Order of Magnitude (ROM) cost estimate of what we think it will take to complete the 3 objectives you are interested in. This ROM estimate will hopefully give you a sense of if we are in the ballpark with regards to your budget. I plan to have the ROM estimate ready for you by the end of the week.

Third, I wanted to pass along to you some information about hydrology and aquatic habitat mapping we completed for NPR-A in 2015. The report for this work is available online. I mention it here only to give you some more examples of work we have done in the past. Were you to contract with us for work in ANWR we would certainly tailor our approach to your specific needs and budget.

Below is a brief synopsis:

In our 2015 project report we prepared an aquatic habitat map for 3 watersheds in western NPRA that is similar to the Fish Creek CAFÉ lake dataset of [Jones et al. \(2017\)](#). We used the aquatic habitat mapping to prepare 1) maps of potential distribution of 39 fish species, and 2) and prepared a hypothetical case study to illustrate the utility of the aquatic-habitat classification and mapping in development planning and permitting.

Download our 2015 report using this link: [Onshore/Nearshore: ABR ONES Desktop Studies 2014-2015 Final Reports](#)

The aquatic habitat mapping is in Section 4.1 starting on PDF page 58 (printed page 44).

In the same report our remote sensing expert, Matt Macander, prepared a map of seasonal water dynamics for the majority of NPRA using a time-series of Landsat images.

The seasonal water-cover analysis can be used to characterize habitat features such as sedge marshes and drained-lake basins, both of which are flooded in the spring and drain through the summer. It also could provide a way to assess the connectivity of lakes that only occasionally are connected to flowing water during periods of high water. This kind of approach when combined with a landcover map can provide more accurate and meaningful map classes.

The 2015 report is quite large. For a shorter synopsis of the entirety of our work in NPR-A from 2010-2015 please see our Executive Summary report available at this link:

[ABR ONES Executive Summary 2010-2015](#)

Please let me know if you have any questions.

Sincerely,

Aaron Wells

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | [ABR Inc. Environmental Research and Services](#)  
1225 E. Intl. Airport Road #101 | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |

On Fri, May 11, 2018 at 10:30 AM, Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)> wrote:

Hi Wendy, I just returned your call and left a voicemail. I'm in the office today through 5:00 pm. My only commitment is a call from 11:00 to noon, otherwise I'm available.

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | [ABR Inc. Environmental Research and Services](#)  
[1225 E. Intl. Airport Road #101](#) | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |

On Fri, May 11, 2018 at 9:18 AM, Wendy Loya <[Wendy\\_loya@fws.gov](mailto:Wendy_loya@fws.gov)> wrote:

Hi Aaron,

Left you a voice message, feel free to give me a call at your convenience.

786-3532

Dr. Wendy M. Loya, Coordinator

Office of Science Applications -Arctic Program

US Fish and Wildlife Service

Anchorage, Alaska

907.786.3532 (office)

907.277.2942 (mobile)

**From:** Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)>

**Sent:** Tuesday, April 24, 2018 10:42 AM

**To:** [Wendy Loya@fws.gov](mailto:Wendy_loya@fws.gov); Diane Granfors <[diane\\_granfors@fws.gov](mailto:diane_granfors@fws.gov)>; [steve\\_wackowski@ios.doi.gov](mailto:steve_wackowski@ios.doi.gov)

**Subject:** [EXTERNAL] ABR, Inc. statement of interested in working with USFWS in Alaska

0000009063

Hello Diane, Wendy, and Steve,

My name is Aaron Wells and I am Senior Ecologist and Principal at ABR, Inc. Environmental Research & Services in Anchorage, AK. I would like to express our interest in working with the U.S. Fish and Wildlife Service (USFWS) in ANWR and across Alaska to provide timely, scientifically rigorous data and mapping products for use in inventorying, managing, and monitoring refuge lands.

ABR was founded as Alaska Biological Research in 1976 in Fairbanks. We specialize in biological and ecological consulting services and are best known for promoting rigorous and objective science within the context of a triple bottom line business philosophy: economic viability, environmental stewardship, and social responsibility.

ABR has completed over 800,000 acres of Integrated Terrain Unit (ITU) mapping on the central Beaufort Coastal Plain on Alaska's North Slope over the past 25 years. The ITU mapping has been used to produce maps of wildlife habitats, soils, wetlands, rare plant habitat suitability, and oil and winter traffic sensitivity. Also, we are currently working on a manuscript describing the ITU mapping methods to be submitted to Arctic, Antarctic, and Alpine research for publication. An example of this work is the report Ecological Land Survey in the Northeast Planning area of the National Petroleum Reserve Alaska (NPRA), 2002. We recently completed 110,000 acres of ITU mapping at a 1:10,000 scale in 4 months from field work to final map product. It would be very straight forward for us to extend this mapping into the 1002 area of ANWR.

We have also developed landcover, ecosystem, and soil maps for all of the National Parks in the Arctic Network. This work is described in the Ecological Land Survey And Synthesis For The Arctic Network Of National Parks. As part of a related project we also extended this mapping into Selawik NWR. This project was completed in 3 years from start to finish. Using a similar mapping approach we could extend the Arctic Network National Park mapping into ANWR to provide a seamless mapping product across the Brooks Range. A major advantage of our mapping approach is that, rather than mapping soils and vegetation separately, we provide an integrated vegetation and soils map thus saving time and money. We also use ancillary data whenever possible to reduce time in the field thus reducing costs.

Over the past 15 years, we have mapped ~80% of the National Park lands in Alaska, averaging ~3 million acres of mapping per year. I recently presented on our NPS mapping to the

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We are currently working on compiling all of our vegetation and soil data from arctic Alaska into a single, integrated PostgreSQL database to facilitate analysis and data sharing.

Lastly, ABR is involved in several working groups throughout the state and nationally, including the Arctic and Pacific Forests (myself) and Boreal (my co-worker JJ Frost) working groups of the U.S. National Vegetation Classification, the [AGC Vegetation Working group](#) (myself and JJ), and the [NRCS initial soil mapping](#) and digital soil mapping working groups (myself). Additionally, I am volunteering as vegetation ecologist on the 2018 USFWS expedition to St. Matthew Island.

In closing I would like to express again our interest in working with the USFWS in ANWR and across Alaska. We are equally comfortable working independently or collaboratively with an inter-disciplinary, inter-agency team, and/or with universities.

Thank you for your time.

Sincerely,

Aaron Wells

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | ABR Inc. Environmental Research and Services  
1225 E. Intl. Airport Road #101 | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |

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**Error! Filename not specified. Error! Filename not specified.**

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*Scott Guyer*

*Landscape Initiatives Coordinator*

Alaska State Office

907-223-6759 (wk cell)

*"Not the victory but the action, Not the goal but the game,*

*In the deed the Glory!"*

--

*Scott Guyer*

*Landscape Initiatives Coordinator*

Alaska State Office

907-223-6759 (wk cell)

*"Not the victory but the action, Not the goal but the game,*

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***Scott Guyer***

***Landscape Initiatives Coordinator***

Alaska State Office

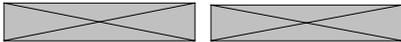
907-223-6759 (wk cell)

***"Not the victory but the action, Not the goal but the game,  
In the deed the Glory!"***

**To:** Guyer, Scott[sguyer@blm.gov]  
**Cc:** Wendy Loya[Wendy\_loya@fws.gov]; Matt Macander[mmacander@abrinc.com]  
**From:** Aaron Wells  
**Sent:** 2018-05-22T15:15:52-04:00  
**Importance:** Normal  
**Subject:** Re: [EXTERNAL] ABR, Inc. statement of interested in working with USFWS in Alaska  
**Received:** 2018-05-22T15:16:38-04:00

Scott is there a way that we could set up screen sharing through the conference line, something like a GoTo Meeting?

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | ABR Inc. Environmental Research and Services  
1225 E. Intl. Airport Road #101 | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |



On Mon, May 21, 2018 at 4:16 PM, Guyer, Scott <[sguyer@blm.gov](mailto:sguyer@blm.gov)> wrote:

Aaron and Matt,

Lets meet at FWS Office at 1011 E Tudor Rd at 9 am on Wednesday. I have reserved a call in phone number if Matt is not in town or wants to call in.

BLM-AK SO Bridge **65 - CIP** Passcode **65 - CIP**

Scott

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

**From:** Wendy Loya <[Wendy\\_loya@fws.gov](mailto:Wendy_loya@fws.gov)>  
**Date:** Mon, May 21, 2018 at 3:56 PM  
**Subject:** RE: [EXTERNAL] ABR, Inc. statement of interested in working with USFWS in Alaska  
**To:** Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)>, Scott Guyer <[sguyer@blm.gov](mailto:sguyer@blm.gov)>  
**Cc:** Matt Macander <[mmacander@abrinc.com](mailto:mmacander@abrinc.com)>, JJ Frost <[jfrost@abrinc.com](mailto:jfrost@abrinc.com)>

If you can come to FWS at 1011 E Tudor Rd, that would be great! I have a room reserved. That would fit in best around the folks' here schedules...

Thanks!

wendy

0000009068

Dr. Wendy M. Loya, Coordinator

Office of Science Applications -Arctic Program

US Fish and Wildlife Service

Anchorage, Alaska

907.786.3532 (office)

907.277.2942 (mobile)

**From:** Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)>

**Sent:** Monday, May 21, 2018 3:45 PM

**To:** Guyer, Scott <[sguyer@blm.gov](mailto:sguyer@blm.gov)>

**Cc:** Wendy Loya <[Wendy\\_loya@fws.gov](mailto:Wendy_loya@fws.gov)>; Matt Macander <[mmacander@abrinc.com](mailto:mmacander@abrinc.com)>; JJ Frost <[jfrost@abrinc.com](mailto:jfrost@abrinc.com)>

**Subject:** Re: [EXTERNAL] ABR, Inc. statement of interested in working with USFWS in Alaska

Scott and Wendy, yes, Wednesday morning at 9:00 am works for us. Where would you like to meet? Our conference room in our Anchorage office is available if you'd like to meet here. We are at [1225 E. Intl. Airport road](#). Otherwise I can meet you where ever works best for you both.

Aaron

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | [ABR Inc. Environmental Research and Services](#)  
[1225 E. Intl. Airport Road #101 | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |](#)

On Mon, May 21, 2018 at 3:30 PM, Guyer, Scott <[sguyer@blm.gov](mailto:sguyer@blm.gov)> wrote:

Aaron, Ok, great we are thinking Wednesday morning at 9 am does that work for you and Matt?

Scott

0000009069

On Mon, May 21, 2018 at 1:10 PM, Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)> wrote:

Scott, yes, I am available to provide a brief presentation describing ABRs land cover experience and methods in the arctic. I'd like to invite our remote sensing expert, Matt Macander, to the meeting as well.

I'm available this week and Monday of next week. After that I am at a lichen workshop in Anchorage and then I depart for field work to St. Matthew Island. I'll be back on June 16 to Anchorage and will be available for most the rest of June.

Aaron

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | [ABR Inc. Environmental Research and Services](#)  
[1225 E. Intl. Airport Road #101 | Anchorage, AK 99518](#) | o 907.344.6777 ext. 222 | c 907.888.8625 |

On Mon, May 21, 2018 at 8:22 AM, Guyer, Scott <[sguyer@blm.gov](mailto:sguyer@blm.gov)> wrote:

Hi Arron,

As Wendy has mentioned I will be assisting FWS with planning and evaluating land cover needs covering the 1002 and outlying areas within ANWR. Would you sometime in the near future be able to provide a brief presentation describing ABRs land cover experience and methods in the arctic? There might be an opportunity to also discuss other data collection as well, soils, NWI etc. Thanks!

Scott Guyer

Landscape Initiatives Coordinator

907-223-6759

On Fri, May 18, 2018 at 10:51 AM, Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)> wrote:

Wendy, thank you for this update. I look forward to working with you and Scott moving forward. Should I continue with developing our ROM estimates as we discussed earlier this week?

Aaron

Aaron F. Wells Ph.D. | Senior Ecologist/Principal | ABR Inc. Environmental Research and Services  
1225 E. Intl. Airport Road #101 | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |

On Fri, May 18, 2018 at 9:04 AM, Wendy Loya <[Wendy\\_loya@fws.gov](mailto:Wendy_loya@fws.gov)> wrote:

Hi Aaron,

Scott Guyer at BLM is going to help us with identifying the pathway forward on veg mapping, he will likely reach out to you for more information on our behalf. Future emails should include the 3 of us 😊

Thank you,

Wendy

Dr. Wendy M. Loya, Coordinator

Office of Science Applications -Arctic Program

US Fish and Wildlife Service

Anchorage, Alaska

907.786.3532 (office)

907.277.2942 (mobile)

**From:** Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)>  
**Sent:** Monday, May 14, 2018 12:16 PM  
**To:** Wendy Loya <[Wendy\\_loya@fws.gov](mailto:Wendy_loya@fws.gov)>  
**Subject:** Re: [EXTERNAL] ABR, Inc. statement of interested in working with USFWS in Alaska

Hi Wendy, Just following up with you on some action items from our phone call last Friday.

First, I followed up with our GIS team and we can perform all three of the tasks you are interested in for ANWR: landcover mapping, NHD mapping, and NWI mapping. We have experience on past projects in all of these areas.

Second, your question about the cost of the Selawik NWR ELS mapping that we did in parallel with the Arctic Network of National Parks back in 2005-2009. We looked into this but given the different objectives for ANWR (landcover mapping, NHD mapping, and NWI mapping) we don't think the costs for the Selawik work we did are a good comparison. So, we are working on preparing a Rough Order of Magnitude (ROM) cost estimate of what we think it will take to complete the 3 objectives you are interested in. This ROM estimate will hopefully give you a sense of if we are in the ballpark with regards to your budget. I plan to have the ROM estimate ready for you by the end of the week.

Third, I wanted to pass along to you some information about hydrology and aquatic habitat mapping we completed for NPR-A in 2015. The report for this work is available online. I mention it here only to give you some more examples of work we have done in the past. Were you to contract with us for work in ANWR we would certainly tailor our approach to your specific needs and budget.

Below is a brief synopsis:

In our 2015 project report we prepared an aquatic habitat map for 3 watersheds in western NPRA that is similar to the Fish Creek CAFÉ lake dataset of [Jones et al. \(2017\)](#). We used the aquatic habitat mapping to prepare 1) maps of potential distribution of 39 fish species, and 2) and prepared a hypothetical case study to illustrate the utility of the aquatic-habitat classification and mapping in development planning and permitting.

Download our 2015 report using this link: [Onshore/Nearshore: ABR ONES Desktop Studies 2014-2015 Final Reports](#)

The aquatic habitat mapping is in Section 4.1 starting on PDF page 58 (printed page 44).

In the same report our remote sensing expert, Matt Macander, prepared a map of seasonal water dynamics for the majority of NPRA using a time-series of Landsat images.

The seasonal water-cover analysis can be used to characterize habitat features such as sedge marshes and drained-lake basins, both of which are flooded in the spring and drain through the summer. It also could provide a way to assess the connectivity of lakes that only occasionally are connected to flowing water during periods of high water. This kind of approach when combined with a landcover map can provide more accurate and meaningful map classes.

The 2015 report is quite large. For a shorter synopsis of the entirety of our work in NPR-A from 2010-2015 please see our Executive Summary report available at this link:

[ABR ONES Executive Summary 2010-2015](#)

Please let me know if you have any questions.

Sincerely,

Aaron Wells

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | [ABR Inc. Environmental Research and Services](#)  
1225 E. Intl. Airport Road #101 | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |

On Fri, May 11, 2018 at 10:30 AM, Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)> wrote:

Hi Wendy, I just returned your call and left a voicemail. I'm in the office today through 5:00 pm. My only commitment is a call from 11:00 to noon, otherwise I'm available.

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | [ABR Inc. Environmental Research and Services](#)  
1225 E. Intl. Airport Road #101 | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |

On Fri, May 11, 2018 at 9:18 AM, Wendy Loya <[Wendy\\_loya@fws.gov](mailto:Wendy_loya@fws.gov)> wrote:

Hi Aaron,

Left you a voice message, feel free to give me a call at your convenience.

786-3532

Dr. Wendy M. Loya, Coordinator

Office of Science Applications -Arctic Program

US Fish and Wildlife Service

Anchorage, Alaska

907.786.3532 (office)

907.277.2942 (mobile)

**From:** Aaron Wells <[awells@abrinc.com](mailto:awells@abrinc.com)>

**Sent:** Tuesday, April 24, 2018 10:42 AM

**To:** [Wendy Loya@fws.gov](mailto:Wendy_Loya@fws.gov); Diane Granfors <[diane\\_granfors@fws.gov](mailto:diane_granfors@fws.gov)>; [steve\\_wackowski@ios.doi.gov](mailto:steve_wackowski@ios.doi.gov)

**Subject:** [EXTERNAL] ABR, Inc. statement of interested in working with USFWS in Alaska

0000009074

Hello Diane, Wendy, and Steve,

My name is Aaron Wells and I am Senior Ecologist and Principal at ABR, Inc. Environmental Research & Services in Anchorage, AK. I would like to express our interest in working with the U.S. Fish and Wildlife Service (USFWS) in ANWR and across Alaska to provide timely, scientifically rigorous data and mapping products for use in inventorying, managing, and monitoring refuge lands.

ABR was founded as Alaska Biological Research in 1976 in Fairbanks. We specialize in biological and ecological consulting services and are best known for promoting rigorous and objective science within the context of a triple bottom line business philosophy: economic viability, environmental stewardship, and social responsibility.

ABR has completed over 800,000 acres of Integrated Terrain Unit (ITU) mapping on the central Beaufort Coastal Plain on Alaska's North Slope over the past 25 years. The ITU mapping has been used to produce maps of wildlife habitats, soils, wetlands, rare plant habitat suitability, and oil and winter traffic sensitivity. Also, we are currently working on a manuscript describing the ITU mapping methods to be submitted to Arctic, Antarctic, and Alpine research for publication. An example of this work is the report Ecological Land Survey in the Northeast Planning area of the National Petroleum Reserve Alaska (NPRA), 2002. We recently completed 110,000 acres of ITU mapping at a 1:10,000 scale in 4 months from field work to final map product. It would be very straight forward for us to extend this mapping into the 1002 area of ANWR.

We have also developed landcover, ecosystem, and soil maps for all of the National Parks in the Arctic Network. This work is described in the Ecological Land Survey And Synthesis For The Arctic Network Of National Parks. As part of a related project we also extended this mapping into Selawik NWR. This project was completed in 3 years from start to finish. Using a similar mapping approach we could extend the Arctic Network National Park mapping into ANWR to provide a seamless mapping product across the Brooks Range. A major advantage of our mapping approach is that, rather than mapping soils and vegetation separately, we provide an integrated vegetation and soils map thus saving time and money. We also use ancillary data whenever possible to reduce time in the field thus reducing costs.

Over the past 15 years, we have mapped ~80% of the National Park lands in Alaska, averaging ~3 million acres of mapping per year. I recently presented on our NPS mapping to the

Alaska Geospatial Council (AGC) vegetation working group. Here is a link to my presentation: [active link](#) (it may take a few minutes to load).

We've also worked across NPRA and produced a map of ecosystems and wildlife habitats for an area the size of the state of Indiana. We accomplished this in 4 years. Additionally we developed a seasonal water-cover analysis and mapping using a time-series of Landsat images. This map can be used to characterize habitat features such as sedge marshes and drained-lake basins, both of which are flooded in the spring and drain through the summer. See our [ABR ONES Executive Summary 2010-2015](#) for an overview of this project.

We are currently working on compiling all of our vegetation and soil data from arctic Alaska into a single, integrated PostgreSQL database to facilitate analysis and data sharing.

Lastly, ABR is involved in several working groups throughout the state and nationally, including the Arctic and Pacific Forests (myself) and Boreal (my co-worker JJ Frost) working groups of the U.S. National Vegetation Classification, the [AGC Vegetation Working group](#) (myself and JJ), and the [NRCS initial soil mapping](#) and digital soil mapping working groups (myself). Additionally, I am volunteering as vegetation ecologist on the 2018 USFWS expedition to St. Matthew Island.

In closing I would like to express again our interest in working with the USFWS in ANWR and across Alaska. We are equally comfortable working independently or collaboratively with an inter-disciplinary, inter-agency team, and/or with universities.

Thank you for your time.

Sincerely,

Aaron Wells

**Aaron F. Wells Ph.D.** | Senior Ecologist/Principal | ABR Inc. Environmental Research and Services  
1225 E. Intl. Airport Road #101 | Anchorage, AK 99518 | o 907.344.6777 ext. 222 | c 907.888.8625 |

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*Scott Guyer*

*Landscape Initiatives Coordinator*

Alaska State Office

907-223-6759 (wk cell)

*"Not the victory but the action, Not the goal but the game,*

*In the deed the Glory!"*

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Alaska State Office

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***Landscape Initiatives Coordinator***

Alaska State Office

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***"Not the victory but the action, Not the goal but the game,  
In the deed the Glory!"***

**To:** Leonard, Paul[paul\_leonard@fws.gov]  
**Cc:** Wendy Loya[wendy\_loya@fws.gov]  
**From:** Matt Macander  
**Sent:** 2018-05-31T17:32:21-04:00  
**Importance:** Normal  
**Subject:** [EXTERNAL] Re: Snow Project  
**Received:** 2018-05-31T17:32:56-04:00

Here are links to some of our previous work that Paul and I discussed:  
Statewide snow persistence map at 30 m resolution (includes ANWR):

<https://irma.nps.gov/DataStore/Reference/Profile/2240701>

Report describing the methods and results:

<https://irma.nps.gov/DataStore/Reference/Profile/2238597>

Journal article describing previous version of the map for a smaller area (range of the Western ArcticCaribou Herd): [https://www.researchgate.net/figure/Study-area-overview-Western-Arctic-caribou-herd-range-northwest-Alaska\\_fig1\\_276117143](https://www.researchgate.net/figure/Study-area-overview-Western-Arctic-caribou-herd-range-northwest-Alaska_fig1_276117143)

On Thu, May 31, 2018 at 12:22 PM, Leonard, Paul <[paul\\_leonard@fws.gov](mailto:paul_leonard@fws.gov)> wrote:

Hey Matt,

I'm curious if we could jump on the phone today about a potential project we are trying to pull together.

1. Work with Matthew Sturm to obtain/utilize existing snow information that has been collected on the arctic coastal plain.
2. Use fine-scale in-situ information to assess the utility/practicability of scaling-up snow depth/distribution to the landscape-scale (ACP)
3. Use information to guide snow monitoring for seismic exploration (bmps, stips)
4. Develop a longer-term snow monitoring network

I have a scope of work that we've been developing but its captured more succinctly in those 4 steps. If interested and/or available please give me a call using signature information to discuss.

Cheers,  
Paul

--

Paul Leonard, PhD  
Science Coordinator  
[Arctic LCC](#)  
[101 12th Ave. Room 216](#)  
[Fairbanks, AK 99701](#)

(907) 456-0445



**From:** mnhayes@blm.gov  
**Location:** BLM-AK SO Denali Room, 222 W. 7th Ave, Anchorage, AK  
**Importance:** Normal  
**Subject:** Invitation with note: Coastal Plain EIS Alternatives Workshop - SEE ATTACHED AG... @ Mon Jul 9 8am - Thu Jul 12, 2018 5pm (AKDT) (jchmielowski@blm.gov)  
**Start Date/Time:** 2018-07-09T12:00:00-04:00  
**End Date/Time:** 2018-07-12T21:00:00-04:00  
[invite.ics](#)

gary.mendivil@alaska

You have been invited to the following event with this note:  
 "SEE ATTACHMENTS AND MESSAGE"

[more details »](#)

**Coastal Plain EIS Alternatives Workshop - SEE ATTACHED AGENDA FOR SPECIFIC TIMES**

Dear ID Team Members and Cooperating Agencies:

In advance of the alternatives development workshop, attached along with the agenda are three items to get you thinking. **As a reminder, these items are internal deliberative documents; please do not disseminate.**

1. **CoastalP SOP Draft.xlsx:** This workbook contains examples of best management practices (BMPs), standard operating procedures (SOPs), and stipulations for fluid mineral leasing. The workbook contains tabs for various resources and also a tab for stipulations. Within each tab are samples from other similar projects in Alaska. Please note that not everything will be applicable, these are just ideas to get us started during the workshop. If you see something that would be applicable for this project, please flag it. Don't worry at this point about whether it is a BMP, SOP, or stipulation. We will go over all of that during the workshop and can categorize things accordingly.
2. **PotentialMitigationMeasures.pdf:** This PDF contains mitigation measures being considered by the GMT2 project, in addition to those identified in the workbook.
3. **Scoping AltsCmts.pdf:** This document contains public comments received during scoping that relate to alternatives to consider as we move forward with developing alternatives. This is NOT all inclusive. In addition, there were public comments that relate to individual resource topics. We will share these during the workshop.

This is an in person workshop only and participants are expected to 1) make decisions/represent their respective areas of expertise or agency; and 2) provide productive input into the alternative development process.

Thank you!

|            |                                                                                                                             |
|------------|-----------------------------------------------------------------------------------------------------------------------------|
| When       | Mon Jul 9 8am Thu Jul 12, 2018 5pm Alaska Time                                                                              |
| Where      | BLM AK SO Denali Room, 222 W. 7th Ave, Anchorage, AK ( <a href="#">map</a> )                                                |
| Video call | <a href="https://hangouts.google.com/hangouts/_/doi.gov/mnhayes">https://hangouts.google.com/hangouts/_/doi.gov/mnhayes</a> |
| Calendar   | <a href="#">s</a>                                                                                                           |
| Who        | jchmielowski@blm.gov                                                                                                        |

- mnhayes@blm.gov - c
- kpeck@blm.gov
- chillis@blm.gov
- craig.perham@boem.
- dwixon@blm.gov
- tomlohman2@aol.com
- Tonya Garnett
- jkeeney@blm.gov
- faith.martineau@alaska
- ctburns@blm.gov



**From:** mnhayes@blm.gov  
**Location:** BLM-AK SO Denali Room, 222 W. 7th Ave, Anchorage, AK  
**Importance:** Normal  
**Subject:** Updated invitation with note: Coastal Plain EIS Alternatives Workshop - SEE ATTACHED AG...  
@ Mon Jul 9 8am - Thu Jul 12, 2018 5pm (AKDT) (david.rogers@alaska.gov)  
**Start Date/Time:** 2018-07-09T12:00:00-04:00  
**End Date/Time:** 2018-07-12T21:00:00-04:00  
[invite.ics](#)

This event has been changed with this note:  
"SEE ATTACHMENTS AND MESSAGE"

[more details »](#)

**Changed: Coastal Plain EIS Alternatives Workshop - SEE ATTACHED AGENDA FOR SPECIFIC TIMES**

When Mon Jul 9 8am Thu Jul 12, 2018 5pm Alaska Time  
Where **Changed:** BLM AK SO Denali Room, 222 W. 7th Ave, Anchorage, AK ([map](#))  
Video call [https://hangouts.google.com/hangouts/\\_/doi.gov/mnhayes](https://hangouts.google.com/hangouts/_/doi.gov/mnhayes)  
Calendar david.rogers@alaska.gov  
Who

- mnhayes@blm.gov - organizer
- ejulianus@blm.gov
- rbrumbau@blm.gov
- craig.perham@boem.gov
- sguyer@blm.gov
- faith.martineau@alaska.gov
- ctburns@blm.gov
- chad.ricklefs@empci.com
- chillis@blm.gov
- wendy\_loya@fws.gov
- david.rogers@alaska.gov
- kate.krebs@empci.com
- tbickaus@blm.gov
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- tvosburgh@blm.gov
- mary\_colligan@fws.gov
- jchmielowski@blm.gov
- paul.decker@alaska.gov
- njones@blm.gov - optional
- slamarr@blm.gov - optional

Attachments

[20180709 CoastalPlain AltsWkshp Agenda.pdf](#)  
[PotentialMitigationMeasures.pdf](#)  
[Scoping AltsCmts.pdf](#)  
[CoastalP\\_SOP\\_Draft.xlsx](#)

**Changed:** Dear ID Team Members and Cooperating Agencies:

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This is an in person workshop only and participants are expected to 1) make decisions/represent their respective areas of expertise or agency; and 2) provide productive input into the alternative development process.

Thank you!

Going? [Yes](#) [Maybe](#) [No](#) [more options »](#)

Invitation from [Google Calendar](#)

You are receiving this courtesy email at the account david.rogers@alaska.gov because you are an attendee of this event.

To stop receiving future updates for this event, decline this event. Alternatively you can sign up for a Google account at <https://www.google.com/calendar/> and control your notification settings for your entire calendar.

Forwarding this invitation could allow any recipient to modify your RSVP response. [Learn More.](#)

**To:** Berendzen, Steve[steve\_berendzen@fws.gov]; Ellefson, Robert[reliefso@blm.gov]  
**Cc:** Joanna Fox[joanna\_fox@fws.gov]; Loya, Wendy[wendy\_loya@fws.gov]; Paul Leonard[paul\_leonard@fws.gov]; Kahn, Lynnda[lynnda\_kahn@fws.gov]; Jeff Hastings[jhastings@saexploration.com]  
**From:** Rick Trupp  
**Sent:** 2018-08-28T13:24:26-04:00  
**Importance:** Normal  
**Subject:** [EXTERNAL] RE: Trip Planning: Seismic equipment and operations review in Deadhorse (Prudhoe Bay); Thursday Aug 30  
**Received:** 2018-08-28T13:24:55-04:00

Steve,

Sounds good. We will be ready for your crew. Temperatures are to be in the 30's. Although you are well aware, for the observation of the vehicles and camp, we'll be outside for an hour or two so please advise to dress comfortably for the weather, wind, snow or rain...

We will have the vehicles to get in and stay warm but just as a precaution to be prepared.

Thanks Rick

**From:** Berendzen, Steve <steve\_berendzen@fws.gov>  
**Sent:** Tuesday, August 28, 2018 8:48 AM  
**To:** Ellefson, Robert <reliefso@blm.gov>  
**Cc:** Rick Trupp <rtrupp@saexploration.com>; Joanna Fox <joanna\_fox@fws.gov>; Loya, Wendy <wendy\_loya@fws.gov>; Paul Leonard <paul\_leonard@fws.gov>; Kahn, Lynnda <lynnda\_kahn@fws.gov>  
**Subject:** Re: Trip Planning: Seismic equipment and operations review in Deadhorse (Prudhoe Bay); Thursday Aug 30

Rob,

As far as I know, there will be four of us participating Thursday:

Steve Berendzen, Arctic Refuge Manger  
Joanna Fox, Arctic Refuge Deputy Manager  
Paul Leonard, Arctic Science Coordinator (Snow Studies lead)  
Lynnda Kahn, Oil and Gas Coordinator Kenai NWR (advisory role to Coastal Plain)

We should be arriving in Deadhorse at 9:15, and we'll all need transportation from and back to the airport (for the 5:25pm departure). Thanks for all your work in coordinating this!

Steve Berendzen  
Refuge Manager, Arctic National Wildlife Refuge  
907 456 0253

On Tue, Aug 28, 2018 at 8:32 AM, Ellefson, Robert <reliefso@blm.gov> wrote:  
Thanks Steve. Let me know if anyone will need a pickup in Deadhorse, Short notice, but its coming together. Let me know if you need anything else. I'll reconfirm everything by the end of the day.

Rob Ellefson

Special Assistant, Alaska State Office  
Bureau of Land Management  
Office: 907-271-4194  
Cell: 907-301-8362  
[rellefs@blm.gov](mailto:rellefs@blm.gov)

On Mon, Aug 27, 2018 at 4:56 PM, Berendzen, Steve <[steve\\_berendzen@fws.gov](mailto:steve_berendzen@fws.gov)> wrote:  
Rob, thanks for the invite and info on logistics. I'll be attending as well as Joanna Fox, my deputy.  
At least a couple others from FWS will attend, but I'm not sure how many.

Steve Berendzen  
Refuge Manager, Arctic National Wildlife Refuge  
907 456 0253

On Mon, Aug 27, 2018 at 11:43 AM, Ellefson, Robert <[rellefs@blm.gov](mailto:rellefs@blm.gov)> wrote:  
Shelly/Steve - SAE is planning to provide the Agencies an overview of their seismic exploration equipment in Deadhorse on Thursday August 30. SAE will provide roundtrip transportation from the airport to their facilities as well as their equipment yard in Deadhorse. BLM will have a videographer on the tour to document equipment information and operations. I'll work the logistics and coordination. **Whoever attends must plan on arriving in Deadhorse prior to 10am on Thursday. Make your travel arrangements today.**

I need the following information from the Agencies (BLM Arctic District; USFWS Refuge; USFWS Regional):

- A headcount and names of Staff attending. Let me know if any staff will not be flying in on the Thursday, 9:15am arrival AlaskaAir flight. We'll have to make sure that any early arrivals connect with the larger group. We've estimated a group of 10 total Agency staff, but can accommodate more if needed.
- A list of any equipment demonstrations you would like.

SAE has provided the following Tentative Agenda for the visit:

- 10a-11:30a -- Presentation on seismic and the typical operations strategy at Deadhorse aviation center
- 11:45a-12:45p -- Lunch at Aurora
- 1:00-2:30p -- SAE Equipment Yard; visit pad site to view equipment and demonstrate a vibrator, transports, and other operations equipment.
- 3:00p -- Return to SAE shop for Q&A
- 5:25p - Departure

8/30/2018 Alaska Air Round Trip Flights

- Flight AS 55 Departs Anchorage 7:35am (arrives Deadhorse 9:15am)
- Flight AS 50 Departs Deadhorse 5:25pm (arriving Anchorage 8:57pm)
  
- or Flight AS 182 Departs Deadhorse 2:20pm (arriving Anchorage 4:18pm)

Rob Ellefson

Special Assistant, Alaska State Office  
Bureau of Land Management  
Office: 907-271-4194  
Cell: 907-301-8362  
[rellefso@blm.gov](mailto:rellefso@blm.gov)

**To:** Ellefson, Robert[rellefs@blm.gov]  
**Cc:** Steve Berendzen[steve\_berendzen@fws.gov]; Paul Leonard[paul\_leonard@fws.gov]; Randy Goodwin[rgoodwin@blm.gov]; Lynnda Kahn[lynnda\_kahn@fws.gov]; Sherman Hogue[shogue@blm.gov]; Joanna Fox[joanna\_fox@fws.gov]; Ted Murphy[t75murph@blm.gov]; Shelly Jacobson[njones@blm.gov]; Loya, Wendy[wendy\_loya@fws.gov]; Greg Siekaniec[greg\_siekaniec@fws.gov]  
**From:** Rick Trupp  
**Sent:** 2018-08-29T19:47:51-04:00  
**Importance:** Normal  
**Subject:** [EXTERNAL] Re: Thursdays SAE Tour of Seismic Equipmemnt  
**Received:** 2018-08-29T19:48:16-04:00

Sounds good Robert. See you then

Sent from my iPhone

On Aug 29, 2018, at 3:20 PM, Ellefson, Robert <rellefs@blm.gov> wrote:

**Rick - There looks to be seven that will need a pickup at the airport tomorrow morning. As far as I know, we are all coming in on the 915 am arrival. See you then.**

**Tomorrow's roster:**

**USFWS**

Steve Berendzen, Arctic Refuge Manger

Joanna Fox, Arctic Refuge Deputy Manager

Paul Leonard, Arctic Science Coordinator (Snow Studies lead)

Lynnda Kahn, Oil and Gas Coordinator Kenai NWR (advisory role to Coastal Plain)

**BLM**

Rob Ellefson, Special Projects Assistant to the State Director, Alaska State Office

Randy Goodwin, Travel Management, Visual Resources, and Lands with Wilderness Characteristics Lead, Alaska State Office

Sherman Hogue, Public Affairs Specialist and Videographer, New Mexico State Office

SAE has provided the following Tentative Agenda for the visit:

10a 11:30a Presentation on seismic and the typical operations strategy  
at Deadhorse aviation center  
11:45a 12:45p Lunch at Aurora  
1:00 2:30p SAE Equipment Yard; visit pad site to view equipment and demonstrate a  
vibrator, transports, and other operations equipment.  
3:00p Return to SAE shop for Q&A  
5:25p Departure

Rob Ellefson

Special Assistant, Alaska State Office  
Bureau of Land Management  
Office: 907-271-4194  
Cell: 907-301-8362  
[rellefso@blm.gov](mailto:rellefso@blm.gov)

**To:** Ellefson, Robert[rellefo@blm.gov]  
**Cc:** Steve Berendzen[steve\_berendzen@fws.gov]; Paul Leonard[paul\_leonard@fws.gov]; Randy Goodwin[rgoodwin@blm.gov]; Lynnda Kahn[lynnda\_kahn@fws.gov]; Sherman Hogue[shogue@blm.gov]; Joanna Fox[joanna\_fox@fws.gov]; Ted Murphy[t75murph@blm.gov]; Shelly Jacobson[njones@blm.gov]; Loya, Wendy[wendy\_loya@fws.gov]; Greg Siekaniec[greg\_siekaniec@fws.gov]  
**From:** Rick Trupp  
**Sent:** 2018-08-31T15:14:55-04:00  
**Importance:** Normal  
**Subject:** [EXTERNAL] RE: Thursdays SAE Tour of Seismic Equipmemnt  
**Received:** 2018-08-31T15:16:32-04:00  
[Equipment ice weights.xlsx](#)

Robert et al,

Thanks for taking the time to visit with us and our staff yesterday. We appreciated the feedback and opportunity to answer some questions about our operations.

I was asked a couple of times for our best practices document for vehicle weights, psi relating to ice check, so please see attached.

Regards  
Rick

**From:** Ellefson, Robert <rellefo@blm.gov>  
**Sent:** Wednesday, August 29, 2018 3:20 PM  
**To:** Rick Trupp <rtrupp@saexploration.com>  
**Cc:** Steve Berendzen <steve\_berendzen@fws.gov>; Paul Leonard <paul\_leonard@fws.gov>; Randy Goodwin <rgoodwin@blm.gov>; Lynnda Kahn <lynnda\_kahn@fws.gov>; Sherman Hogue <shogue@blm.gov>; Joanna Fox <joanna\_fox@fws.gov>; Ted Murphy <t75murph@blm.gov>; Shelly Jacobson <njones@blm.gov>; Loya, Wendy <wendy\_loya@fws.gov>; Greg Siekaniec <greg\_siekaniec@fws.gov>  
**Subject:** Thursdays SAE Tour of Seismic Equipmemnt

**Rick - There looks to be seven that will need a pickup at the airport tomorrow morning. As far as I know, we are all coming in on the 915 am arrival. See you then.**

**Tomorrow's roster:**

#### **USFWS**

Steve Berendzen, Arctic Refuge Manger  
Joanna Fox, Arctic Refuge Deputy Manager  
Paul Leonard, Arctic Science Coordinator (Snow Studies lead)  
Lynnda Kahn, Oil and Gas Coordinator Kenai NWR (advisory role to Coastal Plain)

#### **BLM**

Rob Ellefson, Special Projects Assistant to the State Director, Alaska State Office  
Randy Goodwin, Travel Management, Visual Resources, and Lands with Wilderness Characteristics Lead, Alaska State Office  
Sherman Hogue, Public Affairs Specialist and Videographer, New Mexico State Office

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3:00p -- Return to SAE shop for Q&A

5:25p - Departure

**Rob Ellefson**

Special Assistant, Alaska State Office

Bureau of Land Management

Office: 907-271-4194

Cell: 907-301-8362

[rellefso@blm.gov](mailto:rellefso@blm.gov)

**To:** Matthew Sturm[msturm1@alaska.edu]; Paul Leonard[paul\_leonard@fws.gov]; Wendy Loya[wendy\_loya@fws.gov]  
**Cc:** Hiemstra, Christopher A ERDC-RDE-CRREL-NH[Christopher.A.Hiemstra@erdc.dren.mil]  
**From:** Head, Melissa M (DNR)  
**Sent:** 2018-09-06T20:55:18-04:00  
**Importance:** Normal  
**Subject:** [EXTERNAL] RE: attendees  
**Received:** 2018-09-06T20:58:00-04:00  
[Bryant NICOP 4 2008.06.30.ppt](#)

Hi Everyone,

I stumbled upon this research poster from 2008 that speaks a bit to the trafficability of tundra and the vehicle-snow-soil interfaces. Thought I would pass it along for the good of the group.

Kind Regards,

Melissa

-----Original Message-----

From: Matthew Sturm <msturm1@alaska.edu>  
Sent: Sunday, September 2, 2018 8:01 AM  
To: Paul Leonard <paul\_leonard@fws.gov>; Wendy Loya <wendy\_loya@fws.gov>; Head, Melissa M (DNR) <melissa.head@alaska.gov>  
Cc: Hiemstra, Christopher A ERDC-RDE-CRREL-NH <Christopher.A.Hiemstra@erdc.dren.mil>; Frank Urban <furban@usgs.gov>; Charles Parr <cparr4@alaska.edu>; Fritz Freudenberger <ffreudenberger@alaska.edu>  
Subject: attendees

Hi All:

I am at Oliktok Point finishing up installing instruments prior to the snow season (except it has been snowing here for the past 5 days).  
Should be back tomorrow.

We have reserved Pike's Hotel and are set for the Snow Workshop on Oct. 9-10. We can accommodate as many as 50+ people. So far we have perhaps 27 people signed up, of which about 5 are UAF, which are nice folks, but not our essential target audience.

I would like to enlist your help in recruiting attendees, particular ensuring that regulators, monitors, and industry operators are going to be there. Industry, in particular, is not a group I have many direct ties to, so could use help contacting and convincing them to come. A flier is attached that is a good starter document.

Last I checked with the USFWS, DNR was thinking of co-sponsoring the event. Is that happening?  
Melissa: it would be great if DNR is part of this, and as we talked a few weeks ago, your contacts with industry could really help us ensure the event is as useful as possible.

Please call and contact people for and let them know about the workshop.  
Have them talk to me if they need more information. Thanks all.

Matthew

--

Dr. Matthew Sturm  
Geophysical Institute  
University of Alaska-Fairbanks  
907-474-5257  
msturm1@alaska.edu

**From:** mnhayes@blm.gov  
**Location:** [REDACTED]; passcode [REDACTED], BLM-AK SO Knik Room  
**Importance:** Normal  
**Subject:** Invitation: Coastal Plain CA Meeting @ Fri Sep 21, 2018 1pm - 2pm (AKDT)  
(amy.lewis@empci.com)  
**Start Date/Time:** 2018-09-21T17:00:00-04:00  
**End Date/Time:** 2018-09-21T18:00:00-04:00  
[invite.ics](#)

[more details »](#)

### Coastal Plain CA Meeting

**When** Fri Sep 21, 2018 1pm - 2pm Alaska Time Anchorage  
**Where** [REDACTED] passcode [REDACTED] BLM AK SO Knik Room ([map](#))  
**Video call** <https://hangouts.google.com/hangouts/ /doi.gov/mnhayes>  
**Calendar** amy.lewis@empci.com  
**Who**

- mnhayes@blm.gov - organizer
- tiffany\_tritt\_99722@hotmail.com
- steve\_berendzen@fws.gov
- nvkaktovik@gmail.com
- vaughan.molly@epa.gov
- faith.martineau@alaska.gov
- Tonya Garnett
- patrick hanson
- tomlohman2@aol.com
- wendy\_loya@fws.gov
- kevin.fisher@north slope.org
- amy.lewis@empci.com

**Agenda**  
Preliminary Draft EIS comments and status  
**Next Steps**

Please let me know if there are any additional items you wish to discuss.

Thanks!  
Nicole

Going? [Yes](#) [Maybe](#) [No](#) [more options »](#)  
Invitation from [Google Calendar](#)

You are receiving this courtesy email at the account amy.lewis@empci.com because you are an attendee of this event.

To stop receiving future updates for this event, decline this event. Alternatively you can sign up for a Google account at <https://www.google.com/calendar/> and control your notification settings for your entire calendar.

Forwarding this invitation could allow any recipient to modify your RSVP response. [Learn More.](#)

**From:** mnhayes@blm.gov  
**Location:** BLM AK State Office - Knik Room or Teleconference: b5-CIP passcode b5-CIP BLM-AK SO Knik Room  
**Importance:** Normal  
**Subject:** Invitation: Coastal Plain Oil and Gas Leasing Program - Development o... @ Tue Oct 16, 2018 9:30am - 10:30am (AKDT) (paul.lawrence@srbak.com)  
**Start Date/Time:** 2018-10-16T13:30:00-04:00  
**End Date/Time:** 2018-10-16T14:30:00-04:00  
[invite.ics](#)

[more details »](#)

### Coastal Plain Oil and Gas Leasing Program - Development of a Program PA

**When** Tue Oct 16, 2018 9:30am - 10:30am Alaska Time Anchorage  
**Where** BLM AK State Office Knik Room or Teleconference: b5-CIP passcode b5-CIP BLM AK SO Knik Room ([map](#))  
**Video call** <https://hangouts.google.com/hangouts/ /doi.gov/mnhayes>  
**Calendar** paul.lawrence@srbak.com  
**Who**

- mnhayes@blm.gov - organizer
- jake.anders@srbak.com
- steve\_berendzen@fws.gov
- judy.bittner@alaska.gov
- stephen.braund@srbak.com
- tmcculloch@achp.gov
- r2king@blm.gov
- paul.lawrence@srbak.com
- chad.ricklefs@empai.com
- wendy\_loya@fws.gov
- jkeeney@blm.gov

To discuss BLM's proposed path forward for development of a Programmatic Agreement for compliance with Section 106 of the NHPA for the Coastal Plain Leasing Program EIS. If this time will not work, please advise as soon as possible. An agenda will be forthcoming. Thank you!

Going? [Yes](#) [Maybe](#) [No](#) [more options »](#)

Invitation from [Google Calendar](#)

You are receiving this courtesy email at the account paul.lawrence@srbak.com because you are an attendee of this event.

To stop receiving future updates for this event, decline this event. Alternatively you can sign up for a Google account at <https://www.google.com/calendar/> and control your notification settings for your entire calendar.

Forwarding this invitation could allow any recipient to modify your RSVP response. [Learn More.](#)

**From:** mnhayes@blm.gov  
**Location:** Teleconference **b5-CIP** passcode **b5-CIP** BLM-AK State Office Kodiak A Room - 222 W. 7th Ave, 4th Flr, BLM-AK SO Kodiak A Room  
**Importance:** Normal  
**Subject:** Invitation: Coastal Plain Oil and Gas Leasing Program - Section 106 o... @ Thu Oct 25, 2018 10:30am - 1:30pm (AKDT) (sarah.meitl@alaska.gov)  
**Start Date/Time:** 2018-10-25T14:30:00-04:00  
**End Date/Time:** 2018-10-25T17:30:00-04:00  
[invite.ics](#)

[more details »](#)

### Coastal Plain Oil and Gas Leasing Program - Section 106 of NHPA

**When** Thu Oct 25, 2018 10:30am 1:30pm Alaska Time Anchorage  
**Where** Teleconference **b5-CIP** passcode **b5-**, BLM AK State Office Kodiak A Room 222 W. 7th Ave, 4th Flr, BLM AK SO Kodiak A Room ([map](#))  
**Video call** [https://hangouts.google.com/hangouts/\\_/doi.gov/mnhayes](https://hangouts.google.com/hangouts/_/doi.gov/mnhayes)  
**Calendar** sarah.meitl@alaska.gov  
**Who**

- mnhayes@blm.gov - organizer
- tiffany tritt 99722@hotmail.com
- jake.anders@srbak.com
- judy.bittner@alaska.gov
- sarah.meitl@alaska.gov
- nvkaktovik@gmail.com
- office@cityofkaktovik.org
- timm@asrc.com
- faith.martineau@alaska.gov
- stephen.braund@srbak.com
- eklimasauskas@blm.gov
- paul.lawrence@srbak.com
- tmcculloch@achp.gov
- Tonya Garnett
- patrick hanson
- r2king@blm.gov
- norajane.burns@north slope.org
- tomlohman2@aol.com
- chad.ricklefs@empai.com
- wendy loya@fws.gov
- kevin.fisher@north slope.org
- jkeeney@blm.gov

Hi everyone! This teleconference is being set up to discuss development of a Programmatic Agreement (PA) with the signatories and consulting parties for the Coastal Plain Oil and Gas Leasing Program. Additional details will be provided in a letter later this week, and an agenda will be provided PRIOR to the meeting time on 10/25.

Please see the Advisory Council on Historic Preservation's handbook "Protecting Historic Properties: A Citizen's Guide to Section 106 Review" at [https://www.achp.gov/sites/default/files/documents/2017\\_01/CitizenGuide.pdf](https://www.achp.gov/sites/default/files/documents/2017_01/CitizenGuide.pdf) for more information about the Section 106 process.

Going (sarah.meitl@alaska.gov)? **Yes** **Maybe** **No** [more options »](#)

Invitation from [Google Calendar](#)

You are receiving this courtesy email at the account sarah.meill@alaska.gov because you are an attendee of this event.

To stop receiving future updates for this event, decline this event. Alternatively you can sign up for a Google account at <https://www.google.com/calendar/> and control your notification settings for your entire calendar.

Forwarding this invitation could allow any recipient to modify your RSVP response. [Learn More](#).

**To:** Matthew Sturm[msturm1@alaska.edu]  
**Cc:** Charles Parr[cparr4@alaska.edu]; furban@usgs.gov[furban@usgs.gov];  
eyeager@blm.gov[eyeager@blm.gov]; sgray@usgs.gov[sgray@usgs.gov];  
joshua\_rose@fws.gov[joshua\_rose@fws.gov]; joanna\_fox@fws.gov[joanna\_fox@fws.gov];  
njones@blm.gov[njones@blm.gov]; slamarr@blm.gov[slamarr@blm.gov];  
dwixon@blm.gov[dwixon@blm.gov]; wendy\_loya@fws.gov[wendy\_loya@fws.gov];  
paul\_leonard@fws.gov[paul\_leonard@fws.gov]; sguyer@blm.gov[sguyer@blm.gov];  
mwhitman@blm.gov[mwhitman@blm.gov]; tvosburgh@blm.gov[tvosburgh@blm.gov];  
melissa.head@alaska.gov[melissa.head@alaska.gov]; clif.enochs@alaska.gov[clif.enochs@alaska.gov];  
kimberley.maher@alaska.gov[kimberley.maher@alaska.gov];  
becky.baird@alaska.gov[becky.baird@alaska.gov]; kenneth\_hill@nps.gov[kenneth\_hill@nps.gov];  
wrbolton@alaska.edu[wrbolton@alaska.edu]; pbieniek@alaska.edu[pbieniek@alaska.edu];  
rtladerjr@alaska.edu[rtladerjr@alaska.edu];  
brien.e.reep@exxonmobil.com[brien.e.reep@exxonmobil.com];  
Robyn.E.McGhee@conocophillips.com[Robyn.E.McGhee@conocophillips.com];  
tiffany.c.carey@conocophillips.com[tiffany.c.carey@conocophillips.com];  
rtrupp@saexploration.com[rtrupp@saexploration.com];  
Daniel.Fisher@ak.usda.gov[Daniel.Fisher@ak.usda.gov];  
richard.thoman@noaa.gov[richard.thoman@noaa.gov]; info@akfrontiers.com[info@akfrontiers.com];  
jeffmiller@cruzconstruct.com[jeffmiller@cruzconstruct.com];  
eric.weiman@peakalaska.com[eric.weiman@peakalaska.com];  
stewart.seaberg@asrcenergy.com[stewart.seaberg@asrcenergy.com];  
jennifer.collins@bp.com[jennifer.collins@bp.com];  
Steve.McKendrick@bp.com[Steve.McKendrick@bp.com]; tcater@abrinc.com[tcater@abrinc.com];  
flier@allamericanoilfield.com[flier@allamericanoilfield.com];  
wcrowell@hilcorp.com[wcrowell@hilcorp.com]; graham.smith@alaska.gov[graham.smith@alaska.gov];  
nathaniel.emery@alaska.gov[nathaniel.emery@alaska.gov];  
csbenenson@alaska.edu[csbenenson@alaska.edu]; mmacander@abrinc.com[mmacander@abrinc.com];  
faith.martineaux@alaska.gov[faith.martineaux@alaska.gov];  
jnunley@olgoonik.com[jnunley@olgoonik.com]; Frederick Freudenberger[ffreudenberger@alaska.edu];  
Ken Tape[kdtape@alaska.edu]; jbjohnson5@alaska.edu[jbjohnson5@alaska.edu]  
**From:** Tiffany Thomas  
**Sent:** 2018-10-18T15:15:35-04:00  
**Importance:** Normal  
**Subject:** Re: Thanks!  
**Received:** 2018-10-18T15:15:54-04:00

Hello everyone,  
The materials from the meeting have now gone live at the following link:

<https://sites.google.com/alaska.edu/anwrsnowmeeting/home>

Regards,

*Tiffany Thomas*  
Communications Assistant  
Geophysical Institute  
907-474-5229

'A writer should have the precision of a poet and the imagination of a scientist'

- Vladimir Nabokov

0000009039

On Fri, Oct 12, 2018 at 5:59 PM Matthew Sturm <[msturm1@alaska.edu](mailto:msturm1@alaska.edu)> wrote:

I just wanted to write and thank everyone who attended and helped make our Arctic Refuge snow workshop a success. It was good exchange of ideas and information between agencies, industry, and scientists. The energy at the meeting was very positive, and I think the results will be beneficial to all. As I noted in the meeting, we will have a very simple report of the meeting posted and available shortly for your use; perhaps as soon as next week.

I hope everyone has a good weekend, ad again, Thank you!

Matthew

--

Dr. Matthew Sturm  
Geophysical Institute  
903 Koyukuk Drive  
University of Alaska  
Fairbanks, AK 99775-7320  
907-474-5257