

**From:** [Doherty, Kevin](#)  
**To:** [DElia, Jesse](#)  
**Cc:** [Deibert, Pat](#); [Wiechman, Lief](#); [Davis, Dawn](#); [Steve Abele](#)  
**Subject:** Re: proposed draft e-mail to the GIS/writing team  
**Date:** Friday, February 27, 2015 11:15:35 AM  
**Attachments:** [population index & dist.pdf](#)  
[Predicted Distribution, Leks, Range.pdf](#)

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Hi all,

I would definitely like to finish the conversation that got cut short Tuesday. I think it is important we are all on the same page.

I have attached two pdf's of the distribution model and population index model that could likely be used as a metric by the GIS team. Getting to Jessie's point, there are a lot of non-breeding habitat in the distribution model and SG populations are very clumped( red areas = hotspots within management zones). I am trying to quickly compare these breeding season models to the telemetry based multi-season model in WY & NV with Coates and Fedy. I am not sure when that will be finished, but it could let us know if we should be including the Schroeder distribution layers in the GIS queries.

I have already been working with many applied ecologist to get feedback on my modeling (i.e. Pete Coates, Dave Naugle, Brad Fedy, Jeff Evans) and have had positive reviews. Because I expect heavy seas, once the decision is made, I am also getting a review by the stats kings (i.e Doug Johnson and Mevin Hooten) next week. Once I clear the last level of critic I would feel comfortable sharing these layers. I have asked folks to be critical of my work and not worry about my feelings so I can correct mistakes before it is all part of our decision, so far so good. Realize however, I still need to coordinate all of this with the States through the sage-grouse tech team so they may change. The folks from WAFWA will generally not have the technical skills that the folks above have, but they know their birds and landscapes well, so their feedback is also key. The fact that things may change down to the wire, with my models, the BLM data or the CED, is why I was pushing for some level of automation by the GIS folks.

Cheers  
Kevin

On Fri, Feb 27, 2015 at 10:28 AM, DELia, Jesse <[jesse\\_delia@fws.gov](mailto:jesse_delia@fws.gov)> wrote:

My main concern is tasking the GIS team to conduct an analysis of the direct impacts on the range layer - which may not be a good use of their time (given the scale mismatch). If we just clarify to the team that we want them to assemble the direct impact footprint layers - and that we are working to sort out which is the most appropriate intersect layer representing habitat - I'm good.

Also, suggest pulling Kevin into the conversation as he can help us evaluate whether any of the modeling layers that are forthcoming might be appropriate to use for the intersect.

Jesse

On Fri, Feb 27, 2015 at 9:05 AM, Deibert, Pat <[pat\\_deibert@fws.gov](mailto:pat_deibert@fws.gov)> wrote:

We definitely need to sort this all out, but I don't think we need to do so before I send the

e-mail to the writing and GIS teams. Do we want to set up a call in the next few weeks to do so?

p

On Thu, Feb 26, 2015 at 4:49 PM, Wiechman, Lief <[lief\\_wiechman@fws.gov](mailto:lief_wiechman@fws.gov)> wrote:

This is some of what I don't think we settled on, during Tuesday's call. I'm not sure we're going to be able to look at habitat on a landscape scale, because we'll may not have a 'habitat' layer, per se.

What do the rest of you think? In NV and CA we have habitat mapped (Coates), CO (Rice, CPW), and WY (Fedy, Cam), but they're all done differently and won't be extrapolated across the range. Not sure about WA, OR, ID, MT. I believe ND has an RSF, and I'm pretty sure UT and SD do not have any habitat layers.

We also could use the 'sagebrush' layers used by BLM, but that wouldn't include non-sagebrush habitat. So when we talk about what our analysis will look at, we may be looking at some limitations.

LW

***Lief Wiechman***

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On Thu, Feb 26, 2015 at 4:40 PM, Davis, Dawn <[dawn\\_davis@fws.gov](mailto:dawn_davis@fws.gov)> wrote:

Just to clarify, any measures of impact (either direct or indirect) would be based on habitat and not the polygon of occupied distribution? I'm not sure how meaningful it will be to assess impacts based on occupied range - would this not lead not an overestimate of impact because it could potentially include non-habitat in the analysis?

On Thu, Feb 26, 2015 at 3:11 PM, Wiechman, Lief <[lief\\_wiechman@fws.gov](mailto:lief_wiechman@fws.gov)> wrote:

If I follow your question, Jesse... I think we discussed having those direct (and eventually indirect) analysis happen on all 3 layers. However, it was brought up (by Steve?) that the use of the occupied range may prove to be less useful depending on what the modeled distribution looks like.

So, in summary (and I think this would be good to review and clarify in Kate's notes that she asked us to look at)... I think we talked about getting direct footprint over (1) occupied range, (2) modeled distribution, and (3) modeled abundance, and then to the same (when/where appropriate) with indirect over the same 3 layers.

But now we're getting off the topic of the email - so I looped Dawn in.

LW

***Lief Wiechman***

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On Thu, Feb 26, 2015 at 4:06 PM, Wiechman, Lief <[lief\\_wiechman@fws.gov](mailto:lief_wiechman@fws.gov)> wrote:

(if Jesse wasn't so quick - attached my same reply so we have 1 thread)

Looks fine to me...

2nd bullet under GIS TEAM - consider adding text to clarify 'status review range (updated from Schroeder et al. 2004)' or something. Given the confusion in ID and elsewhere.

As a next step forward, do we need to know what the GIS team has produced (in bullet list form), so if any changes in guidance come up in the near future, we know what the ramifications will be (I'm thinking of any changes that will occur to the 'status review occupied range' map after ID is sorted out? Not sure if we do, just wanted to get your thoughts.

LW

***Lief Wiechman***

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On Thu, Feb 26, 2015 at 4:04 PM, DELia, Jesse <[jesse\\_delia@fws.gov](mailto:jesse_delia@fws.gov)> wrote:

Thanks Pat,

I think this is a good e-mail, but I have a question regarding what layer they are using to do the footprint analysis now; vs. the layer they will use to do the indirect effects analysis. Shouldn't these be the same - i.e., based on the species distribution model? I'm not sure how meaningful it will be to get acreage of direct impact using the range map - which is at a 1:2,000,000 scale.

Are we simply asking them to continue to compile direct footprint layers that we will overlay with abundance and distribution models later to get both the direct and indirect acres?

Jesse

On Thu, Feb 26, 2015 at 2:58 PM, Deibert, Pat <[pat\\_deibert@fws.gov](mailto:pat_deibert@fws.gov)> wrote:  
Jesse and Lief - at last the long-promised e-mail. Let me know what you think - feel free to edit/change/etc. I'd like to get this out tomorrow to the different teams if possible.

thanks!

P

As a follow-up to the call on Tuesday of this week, the species lead team has proposed that we become the liaison between the three key teams working on the species report - the GIS team, the writing team and the modeling team. We hope this will facilitate communication and allow for more expedient resolution of any issues that might arise, simply because we are involved in reviewing the products of all three teams. This "change", and our outline for next steps, has been agreed to by leadership.

GIS Team:

- Please continue to work on the footprints for the various chapters where we will be doing GIS overlays (e.g. current oil/gas, current ag conversion, infrastructure, mining).
- Continue to use current range for mapping and for initial analysis (acres impacted) WITH ONE EXCEPTION. We have found a discrepancy with the range in MZ IV. It may be nothing, but we need to do our due diligence and make sure that adjustments are not needed. We hope to have that resolved by mid-next-week and will advise you of the results. So footprint mapping can continue in this MZ, but you might want to hold off on doing any calculations as they may change.
- As we get the abundance and distribution models completed, we will also ask for your assistance in intersecting with those layers. At that time we will be doing additional analyses that will include the indirect effects calculations. The SLT is working on how that will proceed, so this is a heads up only.

Writing team:

- Continue to work on the chapters and with the GIS team to achieve the footprint analyses.
- If you need GIS analyses beyond calculating the footprint of a threat please copy the SLT on that correspondence. This is simply to ensure we are being consistent across all three teams and don't run into a technical kerfluffle later.
- After we get the abundance and distribution models the GIS team will help overlay those layers with the footprints. Then we will do calculations of indirect effects in the areas of high abundance. The SLT is working out the details of how that will be accomplished.

That's all for now. If you have questions please give one of us a call.

Thanks!

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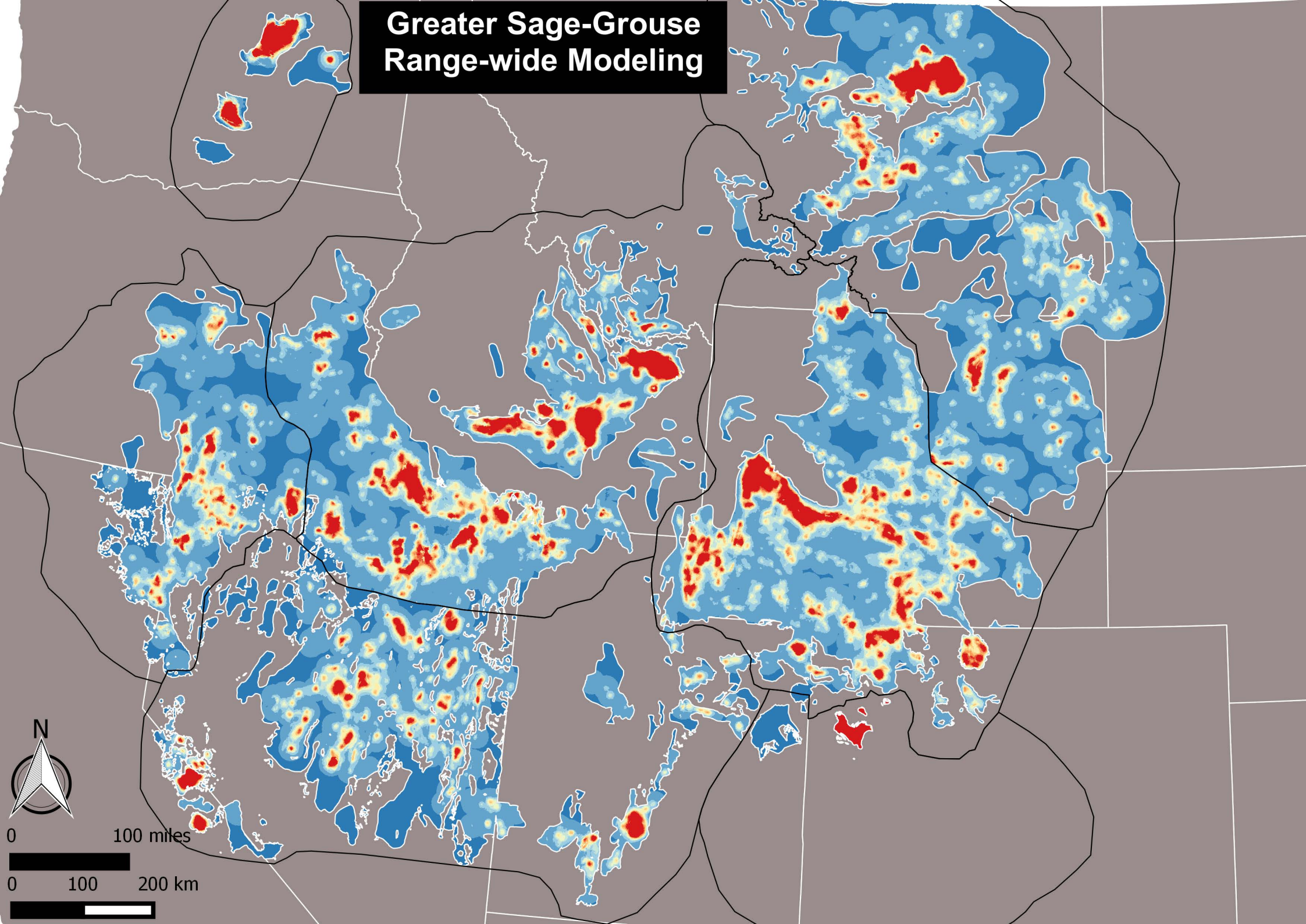
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# Greater Sage-Grouse Range-wide Modeling





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