

From: [Juliussan, Lara](#)
To: [Deibert, Pat](#)
Cc: [Berglund, Jeff](#); [Lindstrom, James](#); [Brent Esmoil](#); [Jodi Bush](#); [Kate Norman](#); [Todd Lickfett](#)
Subject: Re: FW: Keystone/PAC ArcGIS file
Date: Friday, January 30, 2015 10:43:04 AM
Attachments: [GRSG_KXL_buffers_LJ_20150130.pdf](#)

All: Here is a revised map with the population labels removed to avoid confusion, as discussed in this email chain. This map continues to use the 2015 Status Review PACs, as Pat has recommended, for the underlying data, and this is documented on the map. All linear mile and acreage calculations remain the same as the original map.

Todd, just an FYI that there were revisions made past the version you updated.

Thanks,
Lara

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On Thu, Jan 29, 2015 at 12:24 PM, Deibert, Pat <pat_deibert@fws.gov> wrote:
my suggestion is to use the most current maps that we are using for the status review simply to avoid confusion in future discussions. But we need to make it clear in the metadata or other appropriate documentation what we did and why so we don't confuse ourselves (or others) later.

p

On Thu, Jan 29, 2015 at 8:14 AM, Berglund, Jeff <jeff_berglund@fws.gov> wrote:
Thanks Jim - that helps clarify. I definitely defer to the decision makers on this one - whatever makes sense at this point. I think the main issue is that we make the conscious decision for the label, then stick to that. Pat? Kate?

On Thu, Jan 29, 2015 at 8:05 AM, Lindstrom, James <james_lindstrom@fws.gov> wrote:
I guess it really depends on what PAC and Population data you want to use. If you are using old data than yeah you got it.

If you are using the newest GRSG Population data, Population data being used for the 2015 GRSG Status Review, than that small PAC just into MT is part of the Yellowstone Watershed Population.

Jim

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On Thu, Jan 29, 2015 at 7:39 AM, Berglund, Jeff <jeff_berglund@fws.gov> wrote:
Hi all. For purposes of the Keystone map, removing those pop labels seems like a good idea - just to avoid potential confusion in the short run. However, beyond that specific map, this is an issue that should be resolved one way or the other (i.e., what population does that little triangle of PAC that pokes into MT from ND belong to?), since labeling will affect our analysis, BLM rollup, etc. I've attached the COT map showing it as part of the Dakotas pop (yep - did that fancy GIS work all by myself). Also, the descriptive paragraph from the COT report seems to include it in the Dakotas population (the area we're talking about is called the Cedar Creek Anticline). It's a little confusing, because it does reference movement between the Dakotas population and Montana - but then also references Montana's portion of the population. I've attached that paragraph below. Time for an executive decision, I guess - my vote is to include it in Dakotas. Thoughts? Thanks!

The Dakotas's population occurs on the far eastern edge of the range of sage-grouse. **Much of the population occurs in the Cedar Creek Anticline.** Garton et al. (2011) reported the minimum male count for

this population at 587 and predicted a 66 percent chance that this population would dip below 200 males in the next 100 years. Population counts in 2012 for North and South Dakota were approximately 300, so this population as a whole very likely still exceeds 500 birds. Priority areas for conservation (PACs) in North and South Dakota are connected by general habitat consisting of limited sagebrush habitat. Sage-grouse movements generally occur east and west between the Dakotas's population and Montana. Connectivity between the subpopulations occurs through Montana's portion of the population (Knick and Hanser 2011). This area was identified as a PAC in Montana due to historically high density of sage-grouse and for the seasonal habitat it provides for birds from North Dakota, a likely conduit for genetic connectivity. The area is heavily influenced by oil and gas development and conversion of native rangeland to cropland is a major threat to the persistence of this sage-grouse population. Over-grazing in localized areas has degraded the sagebrush habitat and can reduce nesting success. Nesting success was positively correlated to grass cover in North Dakota (Herman-Brunson 2007). Overall, this population is small and at high risk.

On Wed, Jan 28, 2015 at 10:24 AM, Juliusson, Lara <lara_juliusson@fws.gov> wrote:
Thanks Jim!

Jeff, would it be helpful, and avoid confusion on the map, to remove the population labels and just leave the call outs to visually define the areas that each calculation of linear miles and/or acreage refers to?

Jim, here's the original map so you have a frame of reference. Sorry I forgot it in the earlier email.

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On Tue, Jan 27, 2015 at 12:47 PM, Lindstrom, James <james_lindstrom@fws.gov> wrote:
I didn't see any maps and don't know details so I'm not sure what all is going on but I do have a few things to share.

- PAC 108 will not be referenced in the COT Report because PACs did not have Unique Identifiers at the time of the COT. PACs and Populations have also changed since the COT Report.
- I review the PAC data and noticed there was an error in the Unique Name field where the PAC Unique ID was joined with Population and MZ information. Apparently one number was used twice which threw everything off in that field. The PAC Unique ID number was still correct (The Unique ID is the unique identifier for PACs, not Unique Name).
 - I have corrected that problem and uploaded a new set of base data to ScieceBase. Also attached here.
- With that error I don't think PAC 108 is actually in question as that is well inside the Yellowstone Watershed Population. PAC 109 hangs into MT off of the ND border. And that PAC IS inside the Yellowstone Watershed Population. Again, this is the data for the GRSG 2015 Status Review and may be different from the COT Report Data.

Hope that answered questions. Let me know if you need more clarification.

Jim

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On Tue, Jan 27, 2015 at 11:35 AM, Juliusson, Lara <lara_juliusson@fws.gov> wrote:
Jim, can you help answer Jeff's question? I think you added the population attributes to the PAC

data as they have evolved, so maybe you have insight.

Lara

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On Tue, Jan 27, 2015 at 10:52 AM, Deibert, Pat <pat_deibert@fws.gov> wrote:

The lame answer is that I defer to the population description in the COT. Being unfamiliar with the MT landscape I can't with any authority tell you which population polygon 108 lies based on the written COT description (Appendix A, page 63 - 65). If you can provide any insight on that it would be most appreciated.

we are using these populations in our analyses so would suggest polygon 108 follow the population description in the COT.

let me know if I can be more useless.

p

On Tue, Jan 27, 2015 at 10:39 AM, Berglund, Jeff <jeff_berglund@fws.gov> wrote:

Hi Pat and Lara - this map reminds me of a naming / labeling issue that's come up intermittently. According to the COT Report Figure 3 (p. 30 of the report), the Cedar Creek Anticline area ("finger" in MT, right across the border from ND) is included in the Dakotas population- which makes sense. However, on occasion, as in the attached map (polygon 108), this area is labeled as part of the Yellowstone Watershed population. Is there a definitive answer on this so that we can be sure to reference and label this area consistently going forward? Thanks!

Jeff

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

From: **Brent Esmoil** <brent_esmoil@fws.gov>

Date: Tue, Jan 27, 2015 at 9:10 AM

Subject: FW: Keystone/PAC ArcGIS file

To: Jeff Berglund <jeff_berglund@fws.gov>

FYI. Take a look at the attached pdf.

Brent Esmoil

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From: Lickfett, Todd [mailto:todd_lickfett@fws.gov]

Sent: Monday, January 26, 2015 2:31 PM

To: Boroja, Maria

Cc: Lara Juliusson; Drue DeBerry; Michael Thabault; Nicole Alt; Bridget Fahey; Eliza Hines; Robert Harms; Jodi Bush; Brent Esmoil
Subject: Re: Keystone/PAC ArcGIS file

All-

See attached map and summary below with updated numbers for PACs that are intersected by the pipeline/pipeline buffers. Let me know if there are any questions!

Table: Miles of pipeline intersecting each PAC unit, and acreage for intersecting pipeline buffers within each PAC unit.

PAC	Pipeline length (miles)	Buffers 110 ft (acres)	200 ft (acres)	3.1 mi (acres)	5 mi (acres)
101-Northern Montana-MZ1	20.4	544.0	989.4	72399.3	118689.1
103-Yellowstone Watershed-MZ1	17.1	456.7	831.5	55218.8	85831.4
108-Yellowstone Watershed-MZ1	0.0	0.0	0.0	19517.7	45227.0
110-Dakotas-MZ1	0.0	0.0	0.0	818.7	9726.7
111-Dakotas-MZ1	0.0	0.0	0.0	0.0	81.5
112-Dakotas-MZ1	18.2	485.1	882.3	57391.2	73518.9
TOTAL	55.7	1485.8	2703.2	205345.7	333074.6

On Mon, Jan 26, 2015 at 11:44 AM, Boroja, Maria <maria_boroja@fws.gov> wrote:

Todd could you please see if you can update the numbers for this for me.

----- Forwarded message -----
From: **Juliusson, Lara** <lara_juliusson@fws.gov>
Date: Mon, Jan 26, 2015 at 11:27 AM
Subject: Keystone/PAC ArcGIS file
To: Maria Boroja <maria_boroja@fws.gov>

Maria,

Here is the location of the ArcGIS project file I started for the Keystone numbers. I was interrupted before I could finish the tables labeling miles and acres within each buffer for each PAC area. I also didn't get to finish the map sources/disclaimer, etc.

I:\GIS\PROJECTS\20150122_LJ_MTDaks_MBor_KeystonePACbuffers\Mxds\GRSG_KXL_buffers.mxd

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got leks?

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