

**From:** [Grizzle, Betty](#)  
**To:** [A J](#)  
**Subject:** Re: FYI  
**Date:** Tuesday, February 7, 2017 4:49:08 PM

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We have 2 more dens (from our duplicate review) - very NW corner of Montana (1981) and along southern border of MT/ID That second one (IDF&G) says May 18, 2008, with deep snow, high elevation, and was cited as maternal den site with female and two kits, estimated 11-12 weeks of age; kits implanted with radio-transmitters.

I need to talk with Bob about his habitat model so will ask him about his den sites.

On Tue, Feb 7, 2017 at 3:31 PM, A J <[222wsheridan@gmail.com](mailto:222wsheridan@gmail.com)> wrote:

Thanks, Betty. This helps. You should be able to get dens from Bob Inman pretty quickly. At least some of his dens should have been mapped in Copeland et al. 2010 and should be available from Jeff too if they were mapped in that publication.

Sent from my iPhone

On Feb 7, 2017, at 2:37 PM, Grizzle, Betty <[betty\\_grizzle@fws.gov](mailto:betty_grizzle@fws.gov)> wrote:

Hi Audrey - A general comment to your questions. We requested data (observations, dens, etc.) from western States (WA, OR, CA, ID, UT, MT, WY, and NM), either State Fish & Game agencies and/or Natural Heritage databases, as well as from the US Forest Service, so not all of these records are from Jeff Copeland. However, we have not received any data from Wyoming after repeated requests. And we did not show you our duplicate records, which we are still sorting through.

To get to the den results shown in the table, we searched through ALL of the files we received for the word "den" and then reviewed those "hits" to see if they seemed credible. You should be able to see the notes included (where provided) for all of these den records. We understand that some are quite old (e.g., the Grinnell et al. report is a fairly detailed account from his *Fur-bearing Mammals of California* book) and that dates are outside the spring months (and some of Copeland's den reports only include month or time period in months), and, if any of these results are used, this will all be carefully explained (as well as the maternal and natal den distinction or lack thereof).

The maps are very preliminary and I shared these results and the table with you since you are a species expert and/or have direct knowledge about some of these particular locations (or may know of others that we have not been able to obtain, like Inman's). If you believe any of these are not valid, please let us know why they should be removed.

We do not have any den site records from Inman (not in MT data base, and WY data has not yet provided), nor have I received the den site records (9 total) that I requested from Kim Heinemeyer.

The specific agencies and records: Copeland, plus 2 from IDF&G (Kim's), 3

from MT Natural Heritage Program, 1 from Oregon Biodiversity Information Center, 2 from WA Dept of F&W, and 4 from California Natural Diversity Database.

All dens in the table are located on both maps.

N and O are columns we added as a way to internally track what year and snow decade the den was assigned to in our final, merged spreadsheet.

Hope this is helpful.

On Tue, Feb 7, 2017 at 10:01 AM, A J <[222wsheridan@gmail.com](mailto:222wsheridan@gmail.com)> wrote:

Hi Betty

Could you explain the table you sent?

- 1) I assume the date column is the date of the observation, I.e., the date the den was discovered??? Some of the dates are in June and July, so they do not represent natal or even maternal dens. Is that correct? So are they included on your den map? Which dens in the table are on the den map?
- 2) There does not appear to be any dens from Inman's study in the table or on the map. Why is that?  
Is this table only dens contributed by Jeff?
- 3) There are 15 entries in the table that show a date in the 2000-2006 period; all but 2 are from Jeff's work and all of these are from Glacier Park, an area that is suppose to retain snow in the future according to McKelvey et al. 2011.
- 4) I am skeptical about the identification of some of the dens in the table as den sites. What was your requirement for inclusion?
- 5) What are columns N and O?

When you have the time. Thanks.

Audrey

On Feb 6, 2017 3:35 PM, "Grizzle, Betty" <[betty\\_grizzle@fws.gov](mailto:betty_grizzle@fws.gov)> wrote:

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> Hi Audrey - Well, we were able to sort through a few things after receiving grid set from Copeland (though still not identifiable by year).

> See attached spreadsheet. We are preparing a map of this information (different colors used for den sites, matched to Copeland's 1-7 summed year values, and with persistent (=21 day) spring snow cover overlay).

> Betty

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> Betty J. Grizzle, D.Env.

> Fish and Wildlife Biologist

> U.S. Fish and Wildlife Service

> Carlsbad Fish and Wildlife Office

> 2177 Salk Ave, Suite 250  
> Carlsbad, CA 92008  
> 760-431-9440, ext. 215  
> 760-431-5901 fax

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Betty J. Grizzle, D.Env.  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service  
Carlsbad Fish and Wildlife Office  
2177 Salk Ave, Suite 250  
Carlsbad, CA 92008  
760-431-9440, ext. 215  
760-431-5901 fax

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Betty J. Grizzle, D.Env.  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service  
Carlsbad Fish and Wildlife Office  
2177 Salk Ave, Suite 250  
Carlsbad, CA 92008  
760-431-9440, ext. 215  
760-431-5901 fax