

From: [Guinotte, John](#)
To: [Joseph Barsugli - NOAA Affiliate](#); [Stephen Torbit](#); [Betty Grizzle](#)
Subject: Fwd: snowpack projections?
Date: Thursday, June 1, 2017 8:22:38 AM
Attachments: [image003.png](#)
[image001.png](#)
[image002.png](#)
[image004.png](#)

Hi Joe,

When Betty was here we spoke about potential projections for snowpack across the rest of the wolverine range. I had a quick look at this site this am. If you go to the "raster layers for the continental US" link there are several snow raster layers available, including a "Future April 1 SWE" product. The metadata says:

"April 1 SWE and snow residence time were modeled using the spatial analog models of Luce et al., [2014] (see also Lute and Luce, in review). These models are built on precipitation and snow data from Snowpack Telemetry (SNOTEL) stations across the western United States and temperature data from the TopoWx dataset [Oyler et al., 2014]. To simulate historical and future gridded snow, the models ingest gridded winter cumulative precipitation and winter average temperature (from the MACAv2-Metdata dataset described above). While the snow models have been rigorously validated [Lute and Luce, in review], their application to gridded climate model data has not been evaluated"

I'm wondering what you think of this. It looks like the spatial resolution of the model data is approx 4km x 4km. The "Future April 1 SWE" product is RCP8.5 for 2080. If it looks like this is something we could use, I can get in touch with Luce and ask if they have a product for 2050.

Thanks John

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

From: Luce, Charlie -FS <cluce@fs.fed.us>
Date: Wed, May 31, 2017 at 10:12 PM
Subject: RE: snowpack projections?
To: "Isaak, Daniel -FS" <disaak@fs.fed.us>, "Guinotte, John" <john_guinotte@fws.gov>

Hi John,

I'm glad you are interested in snow! We do have some maps up on the web. They are pretty strictly

focused on Forest Service lands at this time, but there is a link for full CONUS arcgis coverage (TIFF) at the bottom of the page.

<https://www.fs.fed.us/rm/boise/AWAE/projects/national-forest-climate-change-maps.html>

I'd be interested in the utility of these for snow-dependent species and if any additional information might be useful.

Best,

Charlie



Charles Luce, PhD
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Caring for the land and serving people

From: Isaak, Daniel -FS
Sent: Wednesday, May 31, 2017 10:47 AM
To: Guinotte, John <john_guinotte@fws.gov>
Cc: Luce, Charlie -FS <cluce@fs.fed.us>
Subject: RE: snowpack projections?

Hi John, I'm not an expert on snow but I work with one, Charlie Luce who's a research hydrologist here in our lab (ResearchGate profile: https://www.researchgate.net/profile/Charles_Luce). I've cc'd him on this & he'll know what exists for snow cover projections and datasets relevant to wolverines in the west. Best, Dan

From: Guinotte, John [mailto:john_guinotte@fws.gov]

Sent: Wednesday, May 31, 2017 7:20 AM

To: Isaak, Daniel -FS <disaak@fs.fed.us>

Subject: snowpack projections?

Hi Dan,

I'm working on the wolverine species status assessment and I'm wondering if you have future snowpack projections across the west? I thought you might have this as part of the Climate Shield project.

Thanks John

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