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**From:** Joe Heublein - NOAA Federal <joe.heublein@noaa.gov>  
**Sent:** Monday, May 27, 2019 7:48 PM  
**To:** Cathy Marcinkevage - NOAA Federal  
**Subject:** Re: GS and Winter Keswick Releases

Hi Cathy,

I agree with the proposed edit

-Joe

On Mon, May 27, 2019 at 1:55 PM Cathy Marcinkevage - NOAA Federal <[cathy.marcinkevage@noaa.gov](mailto:cathy.marcinkevage@noaa.gov)> wrote:

Joe --

Can you tell me if you agree with the proposed edit to our text?

Thanks -  
Cathy

Green sturgeon life history timing is such that spawning occurs from April through July with the median spawning May (Poytress et al., 2015), it is unlikely that green sturgeon will be present in the upper Sacramento River in the December-February period when Reclamation is managing the Winter Minimum Flow component of the PA. However, adult green sturgeon migrate up river in March to early April, and spawning migrations often coincide with high Delta outflow in the spring. Therefore ~~any~~ reductions in late winter flows that affect Delta outflow in February and March could impact spawning migration cues, however the changes in low flows are unlikely to influence the higher flows that sturgeon respond to. [A1]

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[A1] There is a question of magnitude here. Sturgeon are more likely to respond to high flows. The proposed action would affect the lower range of flows. I'm not sure "any" is a reasonable characterization.

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