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**From:** Joe Heublein - NOAA Federal <joe.heublein@noaa.gov>  
**Sent:** Friday, March 1, 2019 5:49 PM  
**To:** Cathy Marcinkevage; J. Stuart - NOAA Federal  
**Subject:** sturgeon modeling in CWF

Hi Cathy,

The only quantitative analysis for green sturgeon in the CWF BO involves salvage comparison of NAA and PA in Table 2-200 and 2-201 on pp. 715-716 (apparently this is from the CWF BA which is temporarily unavailable on our website).

For the ROC LTO BA they use a similar but more qualitative approach (which is probably better considering the extremely low sample size)

#### 5.12.3.7.1 Entrainment

However, estimating entrainment risk from raw salvage data is not possible due to a lack of information on the number of juvenile Green Sturgeon potentially exposed to salvage. Juvenile southern DPS Green Sturgeon (> 5 mo) are present in the Delta all year and sub-adults are most abundant from June through November. As there are no exports under WOA, there is no Green Sturgeon entrainment risk under WOA. In the June through September period under the proposed action Reclamation proposes an average total export rate slightly higher than COS (41 cfs; Figure H-27 – Appendix H, Bay-Delta Aquatics Effects Figures) and will, therefore, have a similar entrainment risk. Total exports proposed for proposed action in September-November (121 cfs higher than COS; Figure H28 – Appendix H, Bay-Delta Aquatics Effects Figures) are unlikely to measurably increase entrainment risk relative to COS. Relative to WOA, the proposed action significantly increases entrainment risk. Juvenile white and green sturgeon are infrequent at the TFCF, but may occur in the facility salvage yearround. Salvage is expected to be similar and slightly higher than COS under the proposed action.

I don't think there is a need for us to ask for modelling on this topic because 1) it will take a while, and 2) I'm not sure it will generate conclusive results for comparing COS and PA.

-Joe

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