



# Water Operations Management Team Notes

January 19, 2023 – Off-Cycle Meeting

## Members Attending

- USBR: Kristin White, Liz Kiteck, Dave Mooney
- USFWS: Jana Affonso
- CDFW: Kristal Davis-Fadtke
- NMFS: Garwin Yip
- DWR: Molly White, Louise Conrad (acting)
- SWRCB: Not present

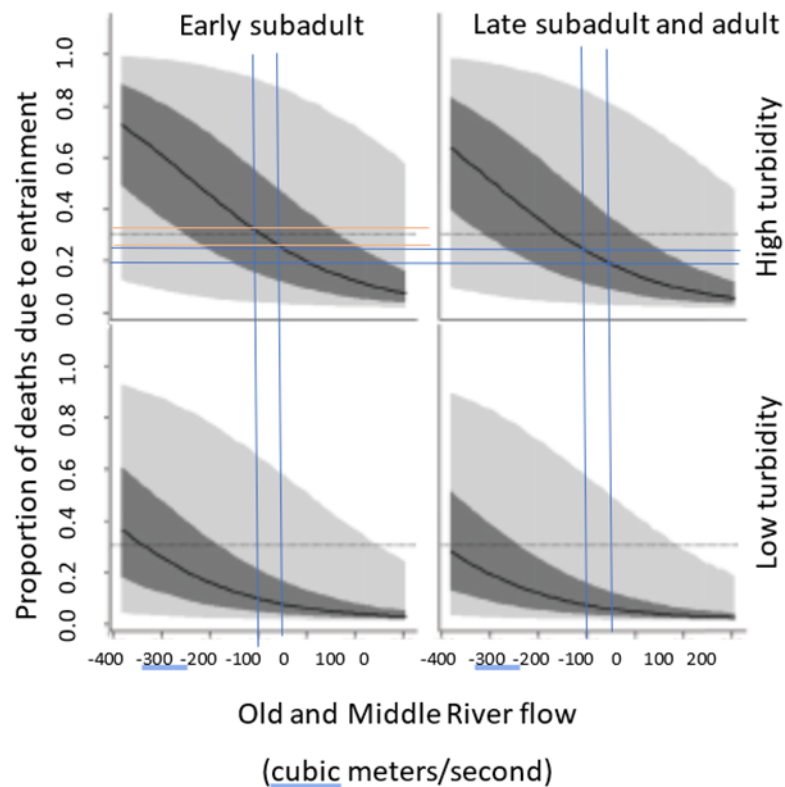
## Topics/Actions

- Review Agenda and Goal of Meeting – Discuss proposed operations and risk assessments and advice from off-cycle Smelt Monitoring Team (SMT) this morning

From Draft PA Risk Assessment Summary: “SMT did not reach a consensus as there are uncertainties in the magnitude of change in risk of entrainment for Delta Smelt from operational changes from -2,000 cfs to -3,500 cfs. The SMT does not think the turbidity bridge can be resolved by any changes to operations and that the turbidity bridge will continue to elevate risk for Delta Smelt in the South Delta. The SMT agrees that risk is high in the OMR corridor (moderate outside) due to turbidity and that risk increases with more negative OMRI. The SMT differed in understanding the magnitude of that increase in risk, given inherently high uncertainty.”

- Relevant Assessments
  - ITP Risk Assessment from Off-Cycle Meeting on 1/19/23 (in prep)
  - Rationale for Proposed Operations by DWR and Reclamation (in prep)
  - Weekly Fish and Water Operations Outlook 1/17/23 – 1/23/2023
  - 20230117 Proposed Action Assessment
  - SMT ITP Risk Assessment Summary dated 1/17/2023

- Discussion Item: WOMT consideration of Reclamation and DWR’s proposal for operations beyond 01/21/23 if daily average turbidity at Old Bacon Island (OBI) remains above 12 FNUs after the initial 5 days (this measure began 1/17/23). Currently, Turbidity Bridge Avoidance (In the PA as “South Delta Turbidity” action and ITP COA 8.5.1) is in effect, which limits OMRI to -2,000 cfs. This limit is not currently controlling because San Joaquin Flows are very high, and the Delta is in excess conditions.
  - Reclamation and DWR are proposing to hold pumping at current levels, which would likely result in OMR between -3,200 cfs and -3,500 over the next 5-7 days. There is still uncertainty in how flows in the San Joaquin River at Vernalis will change during that time, and we may start seeing reservoir releases increase because of previous precipitation (e.g., Tuolumne and Merced rivers). Operational constraints (i.e., size of pumping facilities) will prevent getting to OMR of -5,000 cfs while flows are high in the San Joaquin River, so Reclamation and DWR did not consider that scenario. Analysis can only look forward for 5-7 days because hydrological and operational uncertainty beyond then is too great.
  - Smelt Monitoring Team biologists reached consensus that more negative OMR would increase the risk of entraining Delta Smelt, but the magnitude of that risk cannot be quantified; they did not reach consensus about the magnitude of increase in risk.
  - Reclamation asked FWS to clarify the flexibility in the Biological Opinion while turbidity remains above 12 FNU at OBI. FWS clarified that the PA would allow Reclamation and DWR to present rationale for operating to an OMR that is more negative than -2,000 cfs, and then discuss. This is where in the process we are currently, and FWS want to be clear that they are not yet approving/disapproving and need more information.
  - Reclamation and DWR agree that the entrainment risk vs. OMR relationship is steep currently due to turbidity (see Figure 1, below). Data show that Delta Smelt are present in salvage and in the South Delta. There is no evidence that they are spawning and are likely still dispersing. Entrainment risk is not trivial, but Reclamation believes it is below the level of the Incidental Take Limit. DWR and Reclamation think they can justify the increase in risk, but that a case could also be made to justify staying at -2,000 cfs to be more protective.
  - While SMT advice is important, it is not the only information that WOMT should consider. Reclamation said that their biologists are currently comparing changes in velocity in the OMR corridor (via DSM2) to smelt swimming speeds, and that information may be available later today. Reclamation acknowledged it may not be very helpful for this decision but want to consider all available information.
  - WOMT members wanted to emphasize the operational constraints, as the differences in exports or OMR flow may be very small if San Joaquin River flows remain high.



Modified from figure 3 from Smith et al. 2021. Posterior distributions of predicted entrainment mortality at two levels of water clarity (2007–2015 interquartile range) and a range of Old and Middle river flows. The dark shaded regions indicate the interquartile range of posterior predictions, and the light shaded regions indicate the 95% credible intervals. The dotted horizontal lines indicate the reference point 0.41 \* natural mortality, or 0.29 \* total mortality (Zhou et al. 2012).

*Figure 1 - The graph shows that proportional mortality of adult Delta Smelt due to entrainment is more sensitive to changes in OMRI when turbidity is high (top right). Because the interquartile range (25-75%) exceeds dashed gray line, but credible interval (95%) does not, there is disagreement on how to interpret the magnitude of the increase in risk. The vertical blue lines are at -2,000 cfs and -3,500 cfs OMR. (Shared by Reclamation and DWR)*

- Differences in State and Federal processes:
  - Under the PA and BiOp, Reclamation and DWR need to provide FWS a proposed operation plan and justification 24 hrs in advance of change.
  - Under the ITP, SMT can make advice for different operations; absent SMT advice, OMR would remain at -2,000 cfs as long as the daily average turbidity at OBI is higher than 12 FNU.
  - It was noted that this could potentially cause misalignment if Reclamation wanted to propose different operations. Reclamation clarified that the federal pumps have limited capacity and operational flexibility is only for DWR at this point. DWR confirmed that they would not propose anything that would be inconsistent with the ITP.

- Decisions and Next Steps:
  - WOMT did not reach consensus (Water Board was not present and NMFS abstained), and this topic will be discussed among the Directors.
  - Reclamation will provide additional data and technical information for consideration, which should be available later today.
  - WOMT would like to thank the technical staff and SMT for their work on this subject, including the long meetings and technical reports.

## Next Meeting

- Wednesday, January 25, 1-1:50 p.m.