

Questions for Delta Division Actions– 2019 ROC on LTO

Some of these questions were partially answered on 2/22/19 but were deferred to targeted division work group meetings.

1. *High priority.* General overall question as to the lack of details of proposed operations and actions in Chapter 4 of the BA. How is NMFS supposed to analyze the effects of actions that have a sparse description? For example there are no descriptions of the fish salvage facilities and their operations regarding salvage (i.e. louver efficiency, cleaning of primary louvers and secondary bypasses, CHTR operations, etc.). There are no or limited descriptions of what is being consulted on for other facilities such as the Rock Slough/ Contra Costa Canal, North Bay Aqueduct/ Barker Slough Pumps, Suisun Marsh Salinity Gates. If the operations of the facilities are what is being consulted on, then clearly state that, and provide the operational characteristics of the facilities (i.e., annual volumes to be exported – actual and permitted, seasonal break down of exports, current restrictions on operations, most recent results of surveys for the fish screens such as the CCWD monitoring reports for their facilities, etc.). If that information is available in the appendices, then clearly point to where it can be found.

Resolution: *Reclamation not currently open to sharing the SOPs. Reclamation is open to responding to a specific list of questions. NMFS will follow-up with a specific list of questions.*

2.) *High Priority.* In general, a description of what is proposed in the future action and how it is different than what is currently being implemented for each element. This could be an annotated table or a narrative format.

Resolution: *Reclamation to provide update*

3.) *High Priority.* DCC gate operations under proposed action with respect to frequency of opening for water quality during the fall/early winter seasons (Oct –Jan). Reclamation indicated that they would pull together the historical exceedances of WQ and the gate operations for the last 10 years Clarification of the timing of the two gate closures for 5-days (Dec 1 – May 20 or is it only December and January?) (Progress update).

Resolution: *Reclamation will provide.*

4.) *High Priority.* Delta Agricultural Barriers. Reclamation confirmed that the HORB will not be installed and operated during the spring or during the fall seasons. Reclamation confirmed that consultation is for the operations of barriers only, not construction. Still outstanding questions as to the impacts of the barriers on flow characteristics and transit times of fish using the Old River migratory corridor when barriers are out, installed but with tidal flap gates tied open, and installed with gates operated tidally. BA cites to DWR meta-data analysis and provides a qualitative effects assessment. Need to clarify how BA states that flows are < than 4000 cfs 80% of time when the flows at Vernalis in Appendix D attachment 3-2 have flows consistently > than 4000 cfs from March through May (pages 613-615 of PDF; ~40-60% of the time)? Would like to have the equations used to generate the survival data in the Chinook survival figures from the Head of Old River.

Resolution during call: Katrina to send velocities from DSM2 results to Jeff. Reclamation to send underlying equations to the Chinook survival figure. NMFS to pull Vernalis flows from current modeling results; will check with Reclamation if can't find them.

5). *High Priority*. More thorough explanation of how the OMR Management criteria will be implemented.

- This will include how frequently the expected OMR actions will be implemented under the COS and PA for comparison purposes to show relative protective values under each scenario.
- A description of how the storm flex rules for OMR will be implemented, such as a decision tree indicating when a storm flex will be implemented and how long it will last including whatever current restrictions would lead to restrictions of the storm flex (D-1641 criteria, fish entrainment, etc).

Resolution during call: From “Combined Old and Middle River Flows” section in the PA scenario in Attachment 2-1 of Appendix D:

- *Turbidity Bridge Avoidance:* For January and February in any water year type, if the Turbidity trigger is reached (SAC_RI greater than or equal to 20,000 cfs), Projects operate to 14-day average OMR Index if -2000 cfs for five days. For March through June of Wet and Above Normal years, it is assumed that there will be one event of turbidity bridge avoidance in each month (-2000 cfs for five days).

- *WIIN Act Storm-Related OMR Flexibility:* It is assumed that there may be storm-related OMR management flexibility in January and February. In wet years, it is assumed that storm events will coincide with turbidity bridge events and no OMR flexibility is modeled. In Above Normal and Below Normal years, it is assumed that there will be one opportunity in January and one opportunity in February to operate to a more negative OMR index than -5000 cfs. This is modeled as 14-day OMR index of -6000 cfs for 7 days in each month. In dry years, it is assumed that one opportunity occurs either in January or February but not both months.

- *Species-specific cumulative salvage or loss threshold:* Even though salvage or loss cannot be modeled using CalSim, it is assumed that this threshold would be reached by April and May of above normal and below normal years and species-specific offramp would be met by June. The OMR restriction for this condition is defined as an 14-day average OMR index of -3,500 cfs.

- Resolution of spring-run JPE metric, **Resolution during call:** NMFS and CDFW to consider alternative criteria/approach for spring-run. (Non-urgent)
- Steelhead population presence for initiating/ending protections for those species. **Resolution during call:** NMFS and CDFW to consider alternative criteria/approach for steelhead. (Non-urgent)
- More thorough explanation of how the proposed steelhead protective measure will benefit/ be protective of SJ River basin steelhead, particularly compared to current

practices (I:E ratio and reduced exports). **Resolution during call:** *Reclamation avoided comparisons to BiOp RPA actions in the BA.*

- Explanation of the delay (3-days) before implementing export changes to meet OMR levels following a trigger exceedance. **Resolution during call:** *I missed – please fill in.*
- Clarification of whether loss or salvage is being used for each of the trigger metrics proposed. **Resolution during call:** *Reclamation will clarify for each species.*
- Provide any quantitative modeling (based on 2014 Zeug and Cavallo) done for salvage and entrainment of fish under the COS and PA scenarios to support the qualitative effects assessment in the BA. **Resolution during call:** *Reclamation to follow up with Cramer Fish Science (CFS); CFS thinks they can complete the modeling within two weeks.*

Resolution:

6.) *High Priority.* Description of the operations from both the Skinner and Tracy Fish salvage facilities. This will include the following:

- Current louver efficiencies;
- Current estimates of prescreen loss;
- Louver cleaning procedures and operations, including whether exports will be shut down if louvers are damaged, cleaning takes too long, or other maintenance scenarios where the facilities are not capable of salvaging fish;
- Current collection, handling, trucking, and release information, including post-release survival/mortality, and,
- Any proposed studies or changes to operations to enhance salvage efficiency and/or fish survival applicable to this PA.

Resolution:

7.) *High Priority.* More description of flow effects on fish including:

- Provide any additional quantitative information regarding the effects of flow and water velocity on fish routing and entrainment into channel junctions in the Delta that were completed for the BA (note: based on the information in the BA it is primarily only the north Delta region that was modeled – verify this is correct).
- Include any survival modeling completed by Reclamation.
- Clarify differences in the percentage overlap numbers given in the BA text with the values given in the appendix H.
- Provide any hydrodynamic modeling for the proposed opening of the Sacramento Boat locks including proportion of flow into the Sacramento DWSC, and the velocities expected to be seen in the DWSC. Compare differences in the mainstem Sacramento River flow and velocity parameters between the operations of the boat locks and when they are closed. Seek to identify any potential changes in fish migration and survival between the two boat lock configurations.

Resolution: