

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 lack of details of proposed operations and actions in Chapter 4 of the BA. For example, we need detailed descriptions of:
 - a. the fish salvage facilities and their operations regarding salvage (e.g., louver efficiency, cleaning of primary louvers and secondary bypasses, CHTR operations, etc.).
 - b. other facilities, such as the Rock Slough/ Contra Costa Canal, North Bay Aqueduct/ Barker Slough Pumps, Suisun Marsh Salinity Gates (e.g., annual volumes to be exported – actual and permitted, seasonal break down of exports, current and proposed 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.
 - c. how each element of the proposed action is different than what is currently being implemented.

Resolution:

- 3.) *High Priority.* Progress update on the following:
 - a. Historical exceedances of WQ and the DCC gate operations during the fall/early winter seasons (Oct –Jan) for the last 10 years.
 - b. Clarification of the timing of the two gate closures for 5-days (Dec 1 – May 20 or is it only December and January?)

Resolution:

- 4.) *High Priority.* Delta Agricultural Barriers.
 - a. 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.
 - b. BA cites to DWR meta-data analysis and provides a qualitative effects assessment.
 - c. Need to clarify how BA states that flows are < 4000 cfs 80% of time when the flows at Vernalis in Appendix D attachment 3-2 have flows consistently > 4000 cfs from March through May (pages 613-615 of PDF; ~40-60% of the time).
 - d. Would like to have the equations used to generate the survival data in the Chinook survival figures from the Head of Old River.

Resolution:

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

- b. 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).
- c. Resolution of spring-run JPE metric,
- d. Steelhead population presence for initiating/ending protections for those species.
- e. 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).
- f. Explanation of the delay (3-days) before implementing export changes to meet OMR levels following a trigger exceedance.
- g. Clarification of whether loss or salvage is being used for each of the trigger metrics proposed.
- h. Providing any quantitative modeling done for salvage and entrainment of fish under the COS and PA scenarios to support the qualitative effects assessment in the BA.

Resolution:

- 6.) *High Priority.* Description of the operations from both the Skinner and Tracy Fish salvage facilities. This will include the following:
- a. Current louver efficiencies;
 - b. Current estimates of prescreen loss;
 - c. 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;
 - d. Proposed collection, handling, trucking, and release procession, including post-release survival/mortality, and,
 - e. 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:
- a. 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).
 - b. Include any survival modeling completed by Reclamation.
 - c. Clarify differences in the percentage overlap numbers given in the BA text with the values given in the appendix H.
 - d. 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.

- e. Provide information on changes in flow through the Colusa Basin Drain through Yolo Bypass into Cache Slough and how water quality will be impacted.

Resolution: