

Smelt Working Group
December 13, 2016

Meeting Summary

The Working Group reviewed current Delta conditions, survey data, and forecasted weather and decided to recommend that the Service implement Action 1 of the RPA (-2,000 cfs OMR for 14 days with a corresponding 5 day average OMR of -2,500 cfs) as soon as practicable.

The Working Group is following guidance for entrainment protections from Action 1 (adult Delta Smelt). The Working Group will continue to monitor Delta Smelt survey and salvage data and Delta conditions, and will meet again on Monday, December 19, 2016 at 10 am.

Reported Data

1. **Current environmental data (no graphs were distributed)**
 - a. **Temperature**
Daily averages of the 3 Delta stations (Rio Vista, Antioch, and Mossdale) have been at approximately 11°C for several days.
 - b. **OMR flow**
The CDEC daily average OMR flow for December 12 was -8,520 cfs.
 - c. **River flows and pumping**
Sacramento River at Freeport flow for December 12 was 41,180 cfs. San Joaquin River at Vernalis river flow for December 12 was 938 cfs. X2 is upstream of 81 km.
 - d. **Turbidity**
Turbidity was distributed for daily averages for December 12 for Prisoner's Point (7NTU), Holland Tract (4.3NTU), Sacramento River at Verona (81NTU), Sacramento River at Hood (67NTU, updated to 113NTU during call), and Sacramento River at Rio Vista (12NTU).
2. **Delta fish monitoring**
No new survey information was available.
3. **Modeling**
No new PTM runs were distributed to the group this morning for discussion.
4. **Salvage**
No adult Delta Smelt or Longfin Smelt salvage has occurred so far this water year.
5. **Expected Project Operations**
Another storm is anticipated Thursday of this week. Pumping will be at maximum by Wednesday of this week (10,880 cfs).
6. **Delta Conditions Team**
No update was given to the SWG regarding DCT.
7. **Biological Opinion Background:**

RPA, Action 1: Adult Migration and Entrainment

Objective: A fixed duration action to protect pre-spawning adult delta smelt from entrainment during the first flush, and to provide advantageous hydrodynamic conditions early in the migration period.

Action: Limit exports so that the average daily OMR flow is no more negative than -2,000 cfs for a total duration of 14 days, with a 5-day running average no more negative than -2,500 cfs (within 25 percent).

Timing:

Part A: December 1 to December 20 – Based upon an examination of turbidity data from Prisoner’s Point, Holland Cut, and Victoria Canal and salvage data from CVP/SWP (see below), and other parameters important to the protection of delta smelt including, but not limited to, preceding conditions of X2, FMWT, and river flows; the SWG may recommend a start date to the Service. The Service will make the final determination.

Part B: After December 20 – The action will begin if the 3 day average turbidity at Prisoner’s Point, Holland Cut, and Victoria Canal exceeds 12 NTU. However the SWG can recommend a delayed start or interruption based on other conditions such as Delta inflow that may affect vulnerability to entrainment. Part B has associated triggers involving turbidity and/or salvage.

The window for triggering Action 1 concludes when either the temperature criterion is exceeded or there is evidence of spawning. These off-ramp conditions may occur without Action 1 ever being triggered. If this is the case, Action 3 begins, unless the Service concludes on the basis of the totality of available information that Action 2 should be implemented instead.

8. Assessment of Risk Discussion

The SWG was notified by the Service that the recommendation from December 12 (OMR flows no more negative than -5,000 cfs) would not be implemented. SWG members indicated they wanted to meet to discuss assessment of entrainment risk, given that maintaining OMR flows – at -10,000 cfs for the week would potentially preclude an effective and successful implementation of Action 1 to protect migrating smelt.

Despite there being no updates to surveys and little or no new hydrology or salvage data from December 12, members indicated that their discussion on December 12 and concerns expressed regarding risk to the species indicate that absent an alternative OMR flow prescription, Action 1 should be implemented as soon as is practicable. Members stressed the importance of taking protective action now for the species, as opposed to later in the season. Members noted curtailing OMR to a more positive level at the start of the migration movement has a greater impact on the distribution of the species than more positive levels of OMR later in the season when adults have already moved upstream into spawning habitat and potentially into the sphere of influence of the pumps. Members indicated their desire to avoid a scenario later in the year where salvage continues to occur and survey efforts indicate a significant proportion of the population is at risk of entrainment.

Members indicated that the school of Delta Smelt that were detected in the SKT in December on the Sacramento River suggest that the spawning migration is about to begin. These fish were caught closer to the water surface in the main channel, which suggests they are ready or may

have begun utilizing the tidal cycle for moving upstream into spawning habitat. Additionally, members noted that the cool, wet fall this year may have encouraged the fish to be ready to migrate earlier this year than the historical average.

Although the December SKT detected a large number of Delta Smelt in the Sacramento River at one station, members stressed the continued extremely low abundance of Delta Smelt (the lack of catch in December for the FMWT was noted). The EDSMP has not begun and has no firm start date as yet. Members noted our past assertions that fish likely are present in the lower San Joaquin at Jersey Point year round, as evidenced by previous year's Early Warning Survey catches, even though many IEP surveys do not detect them during the year.

The SWG expressed concerns regarding the current OMR flow (-8,520 cfs today, increasing to -10,000 cfs Wednesday) and the influence this level of flow is having on the Delta hydrology. Members indicated concern that at this level of OMR, the influence of the pumps can extend to the Sacramento River, especially through Three-Mile Slough.

The initial upstream movement of Delta Smelt to spawning habitat is frequently associated with abrupt increases in freshwater inflow and turbidity during the "first flush" flows caused by winter storms. East-side streams' (Mokelumne, Consumnes, Calaveras) flows and turbidity levels have increased from the recent storm. It is unclear at this time how much influence this turbidity will have on the lower San Joaquin River; however, that turbidity has begun to show up at Prisoner's Point and Jersey Point stations. On the Sacramento River, stations in the north Delta have indicated increasing turbidity from the weekend storms. The SWG expects this turbidity to reach the confluence later in the week. The SWG expects that with the storm expected Thursday, that more turbidity will follow a few days later and continuing into early next week. The SWG believes the current and impending hydrology constitute a first flush event. In addition, the storm this Thursday is anticipated to bring strong winds, which are expected to increase turbidity levels in the Old and Middle River channels independent of turbidity input from tributary streams which, in addition to the high turbidities anticipated in the lower Sacramento and confluence, that a turbidity bridge could potentially form into the south Delta under current OMR flows.

Members stressed the importance of keeping turbidity levels low in the lower San Joaquin River so as to avoid a continuous band of high turbidity from the Sacramento River through the southern Delta. Some members indicated this was their major motivation for wanting to implement Action 1 of the RPA.

On Monday, members indicated that they would have concern should Prisoner's Point turbidity reach 10NTU and when the Sacramento River at Rio Vista reached 20-30NTU. The SWG expects that these levels will be reached later this week at both stations. Members discussed a potential recommendation of starting Action 1 over the weekend or on Monday, December 19. However, due to the expected imminent changes in hydrology in both the lower Sacramento River and the lower San Joaquin River, members agreed to an immediate start.

Members unanimously agreed that Action 1 of the RPA should be implemented as soon as practicable. Due to imminent first flush conditions throughout the Delta, members agreed that Action 1 should be implemented immediately, or as soon as practicable.

The Working Group will continue to monitor conditions and smelt distribution and will meet again on Monday, December 19, 2016.