

Delta Smelt Working Group Meeting Notes

February 9, 2007

Participating: Kevin Fleming (CDFG), Lenny Grimaldo (CDWR), Bruce Herbold (EPA), Tracy Hinojosa (CDWR), Victoria Poage (USFWS), Ted Sommer (CDWR), Kevin Sun (CDWR, guest), Jim White (CDFG), and Peter Johnsen (USFWS, convener and scribe)

For Discussion:

1. Delta smelt distribution
2. EWA
3. Continued action after February 15
4. Spring action

Recommendation for WOMT:

The Working Group had the following recommendation for WOMT:

Continue moderating Old and Middle Rivers combined flow to a range of negative 5000 cfs to negative 3500 cfs after February 15.

The Working Group will consider and/or generate additional analyses of existing data and continue to monitor conditions in the Delta and survey sampling results to determine when refinements to the recommendation are needed.

Previous recommendation:

Forego installation of the spring Head-of-Old River Barrier. (DSWG Notes, December 11, 2006). WOMT agencies have taken this recommendation under advisement.

Meeting Notes:

1. The Delta Smelt Working Group reviewed the delta smelt distribution and maturity data from the second Spring Kodiak Trawl that was conducted from February 5 through February 9. In this year of very low apparent abundance, survey results should be interpreted with particular caution. The trawl collected 106 adult delta smelt. With the exception of 2006 (n=84), the number collected was low compared to February surveys in other years. All fish were collected from Suisun Bay/Montezuma Slough, Sacramento River near the confluence with the San Joaquin River, and the Sacramento River Deep Water Ship Channel; none were collected from the Central or South Delta. Areas west of Suisun were not sampled. The distribution was similar to the distribution during survey 1 but differed from mid-February distributions during most other years, which have collected delta smelt in the South and/or Central Delta. That no salvage has occurred suggests that delta smelt are not yet present in the South Delta in any significant numbers. All female delta smelt were at gonadal development stages 1, 2 or 3 (pre-spawning) but five males (3.5 percent of the catch) had mature gonads. The onset of reproductive

maturity appears to be late, chronologically, compared to all other years, probably due to unusually cold weather in January and resulting low water temperature. Water temperatures in most areas of the Delta are approaching 10⁰C. In previous years, surveys have seen some delta smelt with mature gonads at 10⁰C water temperature; female delta smelt are expected to mature as water temperature continues to increase. Because rain is expected and delta smelt appear positioned for potential movement into the Delta, the Working Group requested that the supplemental survey, scheduled to begin February 19, include stations in the South and Central Delta. DFG staff has posted the results of SKT sampling to the web (<http://www.delta.dfg.ca.gov/data/skt/>).

2. The Delta Smelt Working Group discussed the potential accrual of additional EWA debt to the SWP if the current action to moderate the flows at Old and Middle Rivers were to be continued after February 15. Eighteen thousand acre feet of debt were accrued by the end of January. No additional debt has been accrued since February 1 because the OR/MR flow target has been met by the Projects' operating to meet Delta water quality standards. Current and forecasted precipitation may change Delta conditions, and the group noted that continuing the action is likely to draw upon EWA purchased assets. The group was also informed that until now, the repair of the Gorman Creek Channel has suppressed exports and delayed the refill of Castaic Lake. However, completion of the repair will increase the base demand, further potentially increasing the costs of the action if the Delta remains in excess conditions. A preliminary estimate of SWP operations in late February indicates that exports could drive OR/MR flows to negative 8,000cfs. Curtailing exports by approximately 4,000cfs to meet a targeted OR/MR flow of negative 4,000cfs, i.e., continuing the action after February 15 could accrue 8TAF/day of EWA debt to SWP. At this time it is not possible to accurately estimate the actual cost of continuing to moderate OR/MR flows after February 15; however, it was noted that EWA is sufficiently funded to have purchased assets available.

3. The Working Group reviewed its earlier recommendation to continue moderating OR/MR flows after February 15. Given what is known of the delta smelt distribution from the SKT and increasing trends in water temperatures, it appears likely that the onset of spawning is approaching. The position of X2, at approximately 80 km, is an indicator that the risk of entrainment is relatively high. Due to the forecast precipitation, which could trigger additional spawning movements, the Working Group agreed that continuing the action after February 15 is likely to support the goal of avoiding adult salvage. The Working Group therefore recommends maintaining an OR/MR flow target of negative 4,000cfs at least until survey data from the supplemental SKT can be reviewed and discussed.

4. The Delta Smelt Risk Assessment Matrix (DSRAM) incorporated in the Operation Criteria and Plan (OCAP) for SWP and CVP sets criteria which, when exceeded will trigger a Working Group meeting to discuss the development of potential recommendations. Criteria included in the DSRAM that would trigger a concern, meetings by the Working Group, and discussions of spring recommendations include a recovery index below 74, an X2 location upstream of Chipps Island, Delta water temperatures of at least 12⁰C, the presence of mature and spent females, adult distribution, a negative 20mm centroid, low juvenile abundance, and/or high adult salvage. Possible March protection actions identified in DSRAM are export reductions

and changes in San Joaquin River flows. Additional possible protection actions for May and June are changes in barrier operations and changed position of the cross channel gates. This summarizes the base framework for the Working Group and the potential actions that the group may recommend. In addition to the DSRAM, the Working Group will review other information, including the POD Action Plan that was developed by State resource agencies, when developing spring recommendations.

It is not possible for the Working Group to provide a recommendation for a spring action until additional information on Delta conditions and delta smelt distribution and maturity becomes available. However, export reductions to increase OR/MR flows are believed to be the likeliest tool available to minimize entrainment of larvae and juveniles originating from spawning in the South Delta. One possible recommendation to avoid or minimize entrainment could be the POD Action Plan's OR/MR flow target of zero for at least two weeks. However, the Working Group will evaluate other data, analyses, and real-time monitoring results in deciding on appropriate protection recommendations. It is less clear how exports during spring may affect survival of larvae originating from the Sacramento River. Recently modeled fingerprint data by DWR staff indicates that the percentage of Sacramento River particles that become entrained at the SWP during March (1993-2005) is highly correlated (slope = -.003, $P < 0.001$, $r^2 = 0.36$) with Old and Middle River flows. The average percentage of Sacramento River water entrained at the SWP when Old and Middle river flows are less than -5,000 CFS is 68%, between -5,000 and 0 CFS is 28 %, and greater than 0 CFS is 14%. These data suggest that larvae in the Sacramento River are most vulnerable to entrainment when Old and Middle River flows are less than -5,000 CFS. The fingerprint data does not distinguish regional variability, thus it is uncertain whether larvae residing in the Cache Slough complex would be vulnerable at Old and Middle river flows less than -5,000 CFS.

The Working Group requested that DWR staff perform particle tracking (PTM) runs for particles released downstream of Cache Slough at station 711 under OR/MR flow conditions of negative 12,000, 8,000, and 4,000cfs and at zero flow. Particles will also be released in the South Delta at station 815 for comparison. As in the past, the Working Group set a significance criterion of 30% difference in particle fate. The results of the PTM runs will be reviewed along with Delta conditions, spawning progression, and the distribution of juveniles as indicated by the 20-mm Survey before any further recommendations are made.

Next meeting: Monday, February 26 at 3:30 pm via conference call.

Submitted,
PJ