Delta Smelt Working Group Meeting Notes

March 26, 2007

Participating: Mike Chotkowski (USBR), Kevin Fleming (CDFG), Lenny Grimaldo (CDWR), Bruce Herbold (EPA), Tracy Hinojosa (CDWR), Ted Sommer (CDWR), Kevin Sun (CDWR, guest), Ann Lubas-Williams (USBR), and Peter Johnsen (USFWS, convener and scribe)

For Discussion:

1. Latest delta smelt information
2. Previous PTM-runs
3. OMR flows and EWA update
4. Evaluation of current recommendation
5. Head-of-Old River barrier

Recommendation for WOMT:

No new recommendations at this time.

Meeting Notes:

1. The Delta Smelt Working Group reviewed the delta smelt distribution and maturity data from the second supplemental Spring Kodiak Trawl that was conducted on March 20 and 21. The 'Supplemental Survey' is designed to sample areas of high concentration intensively, to estimate the proportion of ripe, unripe, and spent delta smelt.

Water temperatures had cooled down the last few days and most areas of the Delta are near 16^0C. Percentage of mature delta smelt has increased compared to earlier surveys. Of the 93 delta smelt (61 females: 29 males: 3 undetermined) collected, about 39 and 41 percent of the females and males, respectively, were mature. One spent male was collected. The survey only included, and collected, fish from the Montezuma Slough, Suisun Bay, Sacramento River near the confluence with the San Joaquin River, Cache Slough, and the Sacramento River Deep Water Ship Channel (SRDWSC).

The Department of Fish and Game has also completed the first 20-mm survey. The survey was conducted from March 13 through March 17. The observed late gonadal maturation of delta smelt and the short period that temperatures have been above 13^oC suggests that spawning has just started. Larvae are therefore too small to be efficiently sampled by the gear used for the 20-mm survey. Nevertheless, larvae were sampled at stations in Montezuma Slough, the mouth of Sacramento River, and at the Sacramento River/San Joaquin River confluence. Delta smelt was not sampled at Cache Slough, in Sacramento River downstream of the SRDWSC, or from the Central or South Delta. Larvae lengths were measured to 5 millimeters.

DFG staff has posted the results of SKT and 20-mm sampling to the web (http://www.delta.dfg.ca.gov/).

Delta smelt was not salvaged at any of the facilities during the last two weeks and no observations incidental to salvage occurred. Cumulative salvage since the first salvage on February 20 is 36 delta smelt taken at the export facilities. Delta smelt have been observed incidental to the salvage three times since February 14.

2. The Working Group again reviewed the PTM-runs provided by DWR staff for the March 12, 2007, meeting. DWR staff informed the group that projected Sacramento River flows (projected at 13,000 cfs) are likely to be slightly lower than used in the PTM-runs while San Joaquin River flows (projected at 1,800 cfs) will be slightly higher than modeled. Nevertheless, the modeled dry year conditions (SacR @ 15,000 cfs and SJR @ 1,667 cfs) seems to reasonable captures projected hydrological conditions for April (see March 12, 2007, meeting notes for all assumptions used in the PTM-runs). Based on the projected dry April, the Working Group is concerned about larvae entrainment if OR/MR is low.

3. The Working Group discussed if the forgoing the installation of the Head-of-Old River Barrier is likely to provide additional protection to delta smelt larvae given what we know of the current delta smelt distribution. Some members of the Working Group expressed concerned that the SKT trawls have been deceiving and that enough production of larvae in the Central and South Delta may have occurred to be concerned. It was noted that delta smelt larvae have always been present in the Central/South Delta during dry years. The position of X2 was at 74 km just west of Chipps Island and the current increase in exports may have resulted in larvae being drawn into the Central Delta. The 20-mm survey will give a clearer picture of larvae distribution as spawning continues and larvae increase in size.

Earlier PTM-runs have shown that entrainment of particles injected at stations in the South and Central Delta increases substantially when the barrier is installed compared to when they are not installed. On the other hand, OR/MR flows are normally high during VAMP and that installment of the barriers will be of less concern. It was suggested that the group recommend that if the barriers (both the Head-of-Old River and agricultural barriers) were to be installed, they should only be installed during VAMP and then removed once VAMP is completed. However, the hydrology is expected to follow a dry year with San Joaquin River flows of 3,200 cfs and a combined export of 1,500 cfs during VAMP and no double step. The Working Group could not come to a conclusion if the barriers would affect entrainment of larvae originating in the Sacramento River Portion of the Delta given the projected conditions.

Though some larvae may be present in the Central and South Delta, the Working Group still believes that the majority of spawning will occur in the Sacramento River Portion of the Delta. The group therefore felt that any recommendation to WOMT should be concentrated on protecting larvae originating from Cache Slough, SRDWSC, and the Sacramento River downstream of the SRDWSC. Acknowledging that not enough information existed to evaluate how the barriers would affect entrainment during the projected dry conditions, the Working Group requested that DWR provide new PTM-runs for particles injected at Station 815, 711, and 704 with and without the barriers

installed. The Working Group agreed to meet again the next day at 11:00 am to discuss the installation of barriers.

Next meeting: Monday, March 27 at 3:00 pm via conference call.

Submitted,
PJ

Delta Smelt Working Group Meeting Notes

March 27, 2007

Participating: Mike Chotkowski (USBR), Kevin Fleming (CDFG), Lenny Grimaldo (CDWR), Bruce Herbold (EPA), Tracy Hinojosa (CDWR), Victoria Poage (USFWS), Jim White (CDFG), Ann Lubas-Williams (USBR), and Peter Johnsen (USFWS, convener and scribe)

For Discussion:

1. New PTM-runs
2. Head-of-Old River and agricultural barriers

Recommendation for WOMT:

The Working Group withdraws the earlier preliminary recommendation to forgo the installation of the Head-of-Old River barrier.

Meeting Notes:

1. Sacramento River flows are up and pumping on the CVP down to meet an Export/Inflow rate of 35 percent. Currently no additional EWA debt to DWR is accruing. This is expected to change as of April 1 when higher volumes of water will be released in Sacramento River to meet outflow standards and increase water exports. As of April the water year is expected to be characterized as a dry year and San Joaquin River flows are projected at 3,200 cfs during the VAMP period, which is scheduled to start on April 22.

Department of Water Resources' provided for the Working Group additional PTM-runs with the Head-of-Old River barrier installed and a 90 percent exceedence hydrology. Particles were injected at the same stations as in earlier runs without the barriers (stations 711, 704, and 815). In addition, DWR staff provided results for particles injected at another Central Delta station, station 809 (Table 1). The results did not show any substantial increase (all stations had less than one percent increase) in entrainment of particles injected at stations 711, 704, and 815 relative to PTM-runs without the barriers in place (Table 1). With the barriers installed, the percentage of particles injected at station 711 that were entrained at the export facilities increased from less than one percent to almost 5 percent for OR/MR flows of negative 2,000 cfs and negative 4,000 cfs, respectively. Particles injected at station 704 had a similar increase in the percentage of particles entrained at OR/MR flows of negative 4,000 cfs and negative 6,000 cfs, respectively (Table 1). These results were similar to results for PTM-runs without barriers installed.

Particles injected at station 815 (i.e., the Central Delta) had, as was seen with PTM-runs without the Head-of-Old River barriers installed, a substantial increase in percentage of entrained particles between OR/MR flows of negative 2,000 cfs and negative 4,000 cfs. At OR/MR flows of negative 4,000 cfs, the CVP and SWP facilities entrained 35.7 percent of particles injected at station 815. Comparably, without the barriers installed,

35.0 percent of particles injected at station 815 were entrained at an OR/MR flow of negative 4,000 cfs. For particles injected at station 809, a large increase in entrainment (from 3.6 % to 20.6 %) occurred when OR/MR flow was changed from negative 4,000 cfs to negative 6,000 cfs. However, particles were not injected at this station during previous PTM-runs, and the results can therefore not be compared with percent entrainment when barriers are not installed.

Table 1. Comparison of the CVP and SWP combined percentage of particles entrained with and without the Head-of-Old River barrier installed. PTM-run outputs showed particle fates over a 31-day period for five values of Old River/Middle River flow (cfs). All runs assume a 90 percent exceedens (i.e., dry year) hydrology

		Percent particles entrained at different OR/MR flows (cfs)				
Stations	**Barriers**	**0**	**-2000**	**-4000**	**-6000**	**-8000**
704	Without	0	0.3	0.7	4.4	17.5
704	With	0	0.3	0.8	4.6	18.1
711	Without	0	0.1	4.1	15	32.5
711	With	0	0.1	4.7	15.3	33.1
815	Without	0	7.2	35	74.6	91.1
815	With	0	8.7	35.7	75.1	91.5
809	Without	N/A	N/A	N/A	N/A	N/A
809	With	0	0.1	3.6	20.6	48.2

2. The Working Group discussed the barriers based on the previous and new PTM-run results. The group still has concerns with entrainment of larvae originating in the South or Central Delta, or of larva that may have been drawn into the Central Delta from the Sacramento River. Larvae are normally found in relative large numbers in the Central and South Delta during dry years. However, the Working Group believes that for this year very few larvae may be found in the Central Delta because of the current observed distribution of adult delta smelt.

Based on what is known about delta smelt distribution and results from PTM-runs, it seems that forgoing installation of the Head-of-Old River barrier during the VAMP experiment will not provide substantial additional protection of delta smelt. The Working Group therefore generally agreed to withdraw the previous recommendation not to install the Head-of-Old River barriers. However, the Working Group will continue to monitor 20-mm survey results and Delta hydrology to determine if removal of the barrier once VAMP is completed would provide additional protection of delta smelt.

Next meeting: Monday, April 02 at 3:00 pm via conference call.

Submitted,
PJ