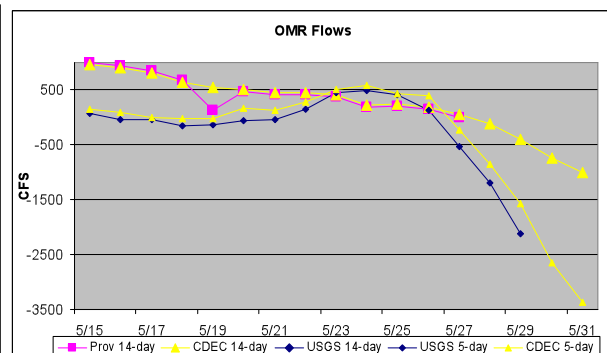
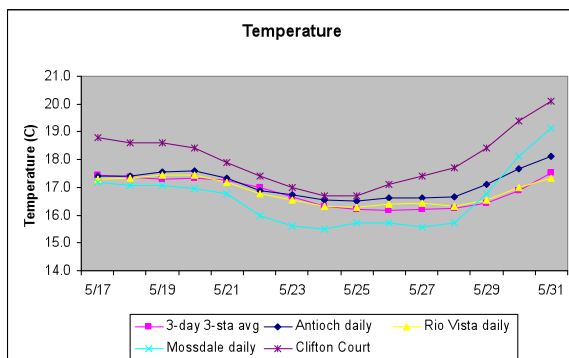


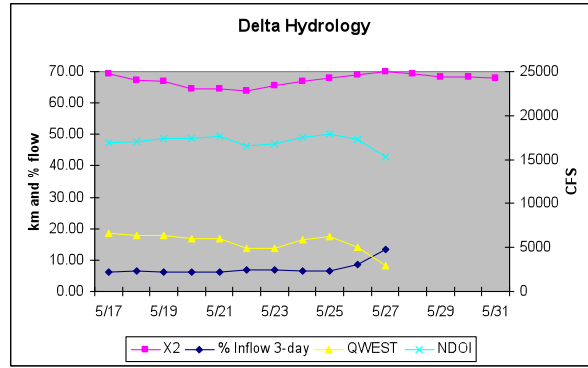
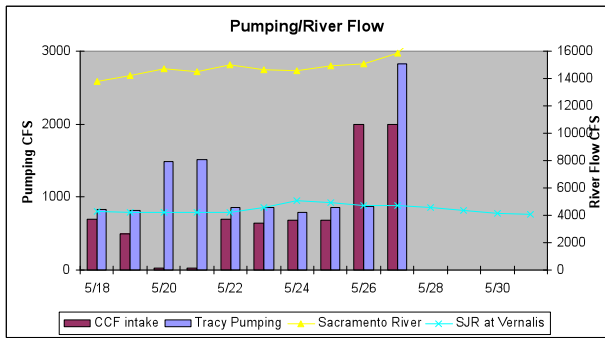
Recommendation for the week of June 1, 2010:

The SWG was unable to reach consensus for this week. A recommendation of -2,000 cfs OMR is based upon providing a short-term proactive action during the current neap tidal cycle, affording juvenile delta smelt the opportunity to move downstream during this outflow period, which continues for the next few days (see notes from 5/28/2010). A recommendation of -5,000 cfs OMR is based upon the absence of salvage since May 21 and the latest survey data, indicating that the overall risk of entrainment is currently low (see notes from 5/24/2010). The Working Group will continue to monitor salvage, survey data, and hydrological conditions and will reconvene June 7.

1) Current environmental data.

- **Water temperature** for the 3 station average is 17.5°C.
- **OMR** USGS 14-day and 5-day tidally-averaged OMR as of May 29 is, respectively, -650 cfs and -2,118 cfs. The 14-day and 5-day OMR average estimate from CDEC as of May 31 is, respectively, -1,010 cfs and -3372 cfs. The 14-day and 5-day provisional estimate of OMR flow as of May 27 is, respectively, -10 cfs and -224 cfs.
- **Flow** Sacramento River inflow is 23,580 cfs and San Joaquin 4,070 cfs. X_2 is 68.06km. As of May 27, E/I ratio is 13.5%, QWEST is 2923 cfs and NDOI is 15296 cfs. The graphs below show the most recent trends in Delta hydrology and water quality that were evaluated by the Working Group.





2) Delta fish monitoring:

20mm Survey #6 was in the field May 24 through 27. Sixteen stations have all three tows processed, one station has two tows processed, and five stations have one tow processed. No tows have been processed for Suisun Bay and downstream, three stations have no tows processed at the confluence area, and five stations have no tows processed on the Sacramento River side. To date, 101 juvenile delta smelt have been counted. All tows have been processed for the central and south Delta, with one delta smelt collected at station 815. Lengths are averaging about 20mm, which is the optimal size for detectability in the 20mm Survey gear. The first Summer Tow-net Survey will begin June 14. The final Spring Kodiak Trawl survey for the season (#5) was in the field May 3 through 5. 20mm Survey 5 was in the field May 10 through 13. Results for both SKT #5 and 20mm Survey 5 were reported at the SWG on May 24. Results from larval surveys, SKT, and 20mm Surveys are available online at: <http://www.delta.dfg.ca.gov/delta>

3) Salvage

As of May 31, juvenile delta smelt salvage was 23. The total authorized take for juveniles (> 20 mm) for May under the biological opinion was 333, expanded. The total authorized take for juveniles (> 20 mm) for June under the biological opinion is 682, expanded. The Concern Level for June is 561. Larval sampling has been discontinued at the CVP and SWP fish facilities. Delta smelt larvae were detected at the CVP on May 12. Longfin smelt larvae were detected at the CVP on April 18.

4) Expected Project Operations

Both the CVP and SWP expect to operate to maintain the -5000 cfs OMR flow as determined by the Service under RPA Action 3.

5) Particle Tracking Modeling

DWR provided four PTM scenarios for review by the Working Group: -5,000cfs, -4,000cfs, -3,000cfs, and -2,000cfs OMR flows. Five injection points were used for the particles: stations 707, 815, 910, 902, and 915. After 31 days, results are as follows:

1. -5,000cfs OMR: station 707 indicated 0.7% entrainment, 815 indicated 30% entrainment, 902 indicated 74.8% entrainment, 910 indicated 74.1% entrainment, and 915 indicated 93.2% entrainment.
2. -4,000cfs OMR: station 707 indicated 0.7% entrainment, 815 indicated 21.3% entrainment, 902 indicated 66.5% entrainment, 910 indicated 60.9% entrainment, and 915 indicated 88.5% entrainment.
3. -3,000cfs OMR: station 707 indicated 0.3% entrainment, 815 indicated 9.6% entrainment, 902 indicated 50% entrainment, 910 indicated 44.3% entrainment, and 915 indicated 82.5% entrainment.
4. -2,000cfs OMR: station 707 indicated 0.2% entrainment, 815 indicated 3.8% entrainment, 902 indicated 33.5% entrainment, 910 indicated 22.2% entrainment, and 915 indicated 71.2% entrainment

The Working Group discussed in particular Scenario A from the PTM results. This scenario showed results from -5,000 cfs OMR flow. Some Working Group members noted the relatively low entrainment until mid-June for station 815; about half the modeled entrainment occurs by the middle of the month at that station, indicating that an early lag in entrainment could result in a peak of entrainment later. The Working Group noted the continuing need to observe salvage over the coming week for further discussion at the next SWG meeting.

6) Discussion for Recommendation

The Working Group reviewed and discussed all relevant data from fish surveys, Delta monitoring, salvage, and planned Project operations.

The juvenile protective phase of the biological opinion (RPA Component 2; Action 3 in Attachment B) is in effect. This action will continue until June 30 or when the 3-day mean water temperature at Clifton Court Forebay reaches 25⁰C, whichever occurs earlier.

Component 2, Action 3 of the biological opinion, which is intended to protect larvae and juvenile delta smelt, includes a range of OMR flow from -1,250 cfs to -5,000 cfs. The BO provides guidance for the assessment of the risk of entrainment of larvae and juveniles and for determining the appropriately-protective OMR flows within that range for any given week. The BO (pp 353-354) specifies that if entrainment risk is low, OMR flows could be expected to remain as negative as -5,000 cfs, but if entrainment risk is higher, OMR flows would be set so as to reduce that risk. The risk factors are (1) evidence (i.e., from survey data) that delta smelt are present in the South or Central Delta, and (2) evidence of ongoing entrainment.

No salvage has been reported since May 21. However, some members noted that this may not be a critical point in discussing the risk to delta smelt juveniles. Both the CVP and SWP have been increasing their pumping since May 26 to meet -5,000cfs OMR flow. The Working Group once again noted the historical pattern of a pulse in salvage following an increase in pumping. The Working Group expects a pulse of salvage in the coming days in response to the increase in pumping. Neither the timing nor the magnitude of this pulse can be predicted.

The Working Group once again noted that the conditions in the Delta this year have presented delta smelt with an extended spawning season, and multiple cohorts are anticipated. The Working Group expressed concern that a cohort may be present in the Delta that is younger than those being detected by the latest 20mm Survey. Delta smelt less than 20mm are not optimal for the 20mm Survey gear, and therefore, are more likely to be missed. However, Delta water temperatures are beginning to warm, which is likely to cue juvenile delta smelt to move downstream.

Main Discussion supporting -2,000 cfs OMR:

Some Working Group members also expressed a desire to facilitate downstream movement of delta smelt during the current neap phase of the tidal cycle. This net draining portion of the cycle is expected to last another few days. Some Working Group members supported a restriction in OMR to -2,000 cfs during the neap phase, which would afford juvenile delta smelt the opportunity to move downstream to their rearing areas in the low-salinity zone.

Main Discussion supporting -5,000 cfs OMR:

The Working Group noted that cumulative juvenile delta smelt salvage has been low (23 expanded salvage) and the results from the 20mm Survey #5 and the preliminary results from 20mm Survey #6 provide evidence that the risk of entrainment of larval and juvenile delta smelt is likely low. For 20mm Survey #6, only one delta smelt was detected in the interior Delta, at station 815.

The Working Group noted that longfin smelt distribution is largely westward of the confluence and outside of the influence of the pumping facilities.

Next Meeting: Monday, June 7, 2010 at 10 am.