SMELT WORKING GROUP
Monday, June 21, 2010

Recommendation for the week of June 21, 2010:

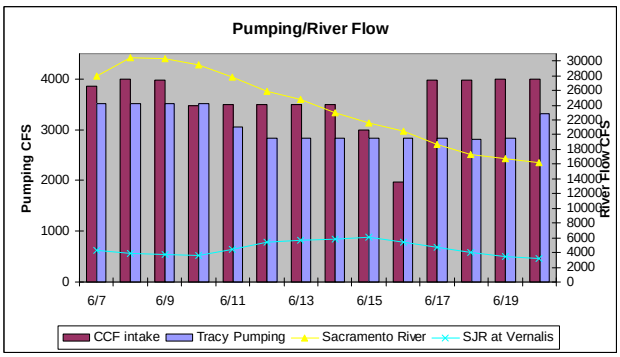
The SWG recommended -5000 cfs OMR flow, based upon the absence of salvage since June 8 and the latest survey data, indicating that the overall risk of entrainment is currently low. The Working Group will continue to monitor salvage, survey data, and hydrological conditions and will reconvene June 28.

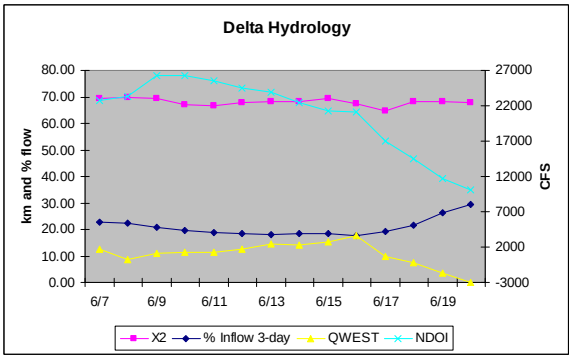
1) Current environmental data.

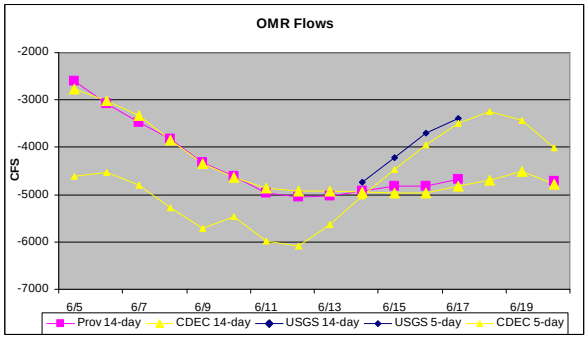
- **Water temperature** for the 3 station average is 19.6°C. The temperature at Clifton Court Forebay is 21.4°C.

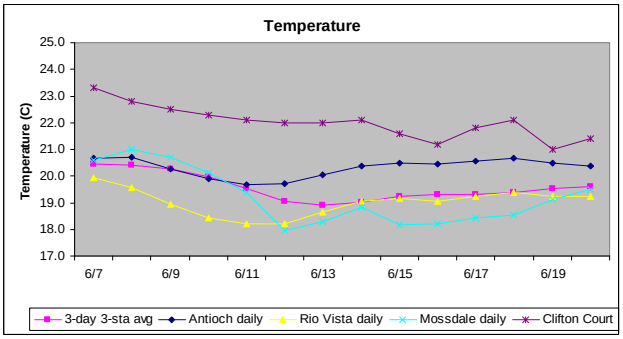
- **OMR** USGS 5-day tidally-averaged OMR was -3384 cfs on June 17. The 14-day average will become available June 23. The 14-day and 5-day OMR average estimate from CDEC as of June 20 is, respectively, -4772 cfs and -4005 cfs. The 14-day and 5-day provisional estimate of OMR flow is, respectively, -4005 cfs and -4712 cfs.

- **Flow** Sacramento River inflow is 16192 cfs and San Joaquin 3223 cfs. X_2 is 67.70km. As of June 20, E/I ratio is 29.5%, QWEST is -2937 cfs and NDOI is 10019 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 #7 was in the field June 7 through 10. All tows have been processed. To date, 96 juvenile delta smelt have been counted, 56 from station 719. Lengths range from 8 to 48mm, with an average of about 23mm. 20mm Survey #8 is in the field this week. The first Summer Tow-net Survey was completed last week. No data is available at this time. Results from larval surveys, SKT, and 20mm Surveys are available online at: http://www.delta.dfg.ca.gov/delta

3) Salvage

As of June 20, juvenile delta smelt salvage was 29. The cumulative authorized take for juveniles (> 20 mm) through June under the biological opinion is 842, expanded. The Concern Level for June is 561. Larval sampling has been discontinued at the CVP and continues at the 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

The Working Group did not request PTM runs for this week.

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 until water temperature at Clifton Court Forebay reaches a daily average of 25^0C for three consecutive days, 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 -1250 cfs to -5000 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 -5000 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.

The Working Group noted that cumulative juvenile delta smelt salvage has been low (29 expanded salvage), and that no salvage has been detected since June 8. Additionally, the results from the 20mm Survey #7 provide evidence that juvenile delta smelt may have largely moved

downstream of the interior delta and that the risk of entrainment of larval and juvenile delta smelt is likely low. No delta smelt were detected in the interior Delta for 20mm Survey #7.

Based upon the low overall estimate of the risk of entrainment and the continual suitable water temperatures, the Working Group recommended that the Projects continue to manage to an OMR no more negative than -5000 cfs.

Some Working Group members have recently expressed cautious optimism that this spring's overall favorable conditions (cool temperatures and favorable hydrology) may result in a good production year for delta smelt this fall. However, this productivity (if it occurs) may not be reflected in the Summer Tow-Net Index, which is expected to be set by the small adult population and poor fall habitat conditions of 2009. Spawner/recruit equations, including equations that incorporate fall X_2 effects, predict a 2010 TNS index of 0.33, the same as 2009. The occurrence of larger juvenile fish this summer could indicate better survival and growth from summer to fall. If summer numbers are elevated it would suggest that good springtime conditions may have overridden the small adult populations and poor habitat conditions of 2009. In any case, the Working Group cautions the Service and the WOMT that with population numbers at an all-time low, it may be overly optimistic to expect a detectable increase in production over previous years.

The Working Group discussed the wide size range of delta smelt juveniles in the 20mm Survey #7 catch. The larger juveniles detected were >40mm, while the smaller fish were <10mm. Assuming a hatching size of about 5 mm and a growth rate averaging about 0.5 mm per day, the largest fish likely were spawned in early March. Upon review of SWG notes from March 1, the Working Group felt that spawning likely had begun at about that time. This supports the assumptions that the Working Group made at that time regarding the onset of spawning.

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 28, 2010 at 10 am.