

## SMELT WORKING GROUP

Monday, March 3, 2008

### WEEKLY ADVICE TO THE SERVICE

Recommendation:

**Maintain the 7-day average combined OMR flow more positive than -2000 cfs.**

Basis for recommendation:

The recommendation is based on a review of active risk factors.

1. Size of spawning population. The 2007 Fall Midwater Trawl (FMWT) index of 28 (the second lowest on record) continues a record of declining abundance indices that started in about 2000, with two of the last three years setting new record lows. The persistence of such extremely low FMWT indices creates a very high degree of concern for the work group.
2. Water temperatures. Water temperatures at all three stations of record (Antioch=12°C, Rio Vista=12°C, Mossdale=14°C) are at or above 12°C, and temperatures are trending upward. The Working Group concluded that throughout the Delta, water temperature conditions are above the commonly-accepted 12°C threshold that historically has marked the beginning of peak spawning. The work group expects that large-scale spawning is underway in the southern and central delta and is beginning in the north Delta, and that larval fish are either already at risk of entrainment or might become at-risk this week.
3. Recent salvage. Adult delta smelt salvage has been higher than expected this year. The adult concern level (formerly known as “yellow light”), was reached on February 22<sup>nd</sup>. The entrainment of a larger-than expected number of adult smelt creates substantial concern on the part of the Working Group. It also suggests that a larger-than-usual percentage of delta smelt spawners may be present in the south and central Delta areas and are presently vulnerable to entrainment. The Working Group has noted that no salvage occurred on March 1-2 at either facility during the ramp-down of exports following last week’s Service decision to maintain OMR at -3,000 cfs. However, zero sampling of delta smelt at the salvage facilities has occurred for short periods of time previously this season even during relatively high exports. Therefore, while the Working Group is encouraged that this indicates that the curtailment is having the expected effect, we do not view two days of data as dispositive one way or the other
4. Spawning condition of salvaged adult delta smelt. The presence of a spent male delta smelt at the CVP/SWP salvage facilities on February 15, 2008, and a spent female on 2/17/08 indicates that at least some spawning started no later than mid-February. No new information on adult maturity conditions have been available since these reports and it is therefore not possible to estimate what fraction of adult fish may have already spawned to date.

5. Adult distribution from SKT. The most recent Spring Kodiak Trawl (02/04/08 to 02/07/08) data on distribution, together with a consistent salvage of delta smelt at the CVP/SWP facilities through February 29, 2008, indicates that adult delta smelt have entered the central and south Delta. Although the previous SKT survey no longer represent current conditions, the Working Group sees no reasons either in historical experience or other available data to believe that smelt have since evacuated the central and south Delta and moved into the north Delta.

6. Exposure Risk. We believe that a significant fraction of this year's smelt population may be distributed in the central Delta where they are vulnerable to entrainment. The Working Group is therefore concerned that entrainment of larval and juvenile delta smelt spawned in the central Delta may represent loss of a substantial percentage of this year's delta smelt production. The reasons for our concern are (1) the SKT is a poor tool for detecting very sparsely distributed fish, making inference about overall distribution risky; (2) nevertheless the SKT has detected at least one adult smelt in each of two central/eastern Delta locations; and (3) cumulative salvage indicates that a relatively large number of delta smelt have entered the south and central Delta.

7. Particle tracking results. The Working Group believes the most efficient protective measure at this time is to prevent entrainment of fish in as large a portion of the central Delta as is practical. Results of the PTM requested last week indicated that achieving protection at station 815 (Prisoner's Point) would automatically confer protection at 812 (Fisherman's Cut) and other stations downstream and north of 815. While the Working Group believes that entrainment at 815 should be prevented (i.e. entrainment of 0% is the appropriate target), there appears to be little additional entrainment protection (less than 5%) at negative OMR flows up to 2000 cfs, compared to the least negative OMR flow (750 cfs) from the range defined by Judge Wanger. However, a faster-than-linear increase in entrainment occurs as negative OMR flows grow above 2,000 cfs. To minimize entrainment and avoid high entrainment that might occur during short periods within the 7-day averaging period to which OMR is managed, we recommend that OMR be limited to -2000 cfs or a value more positive than that. We have seen some additional PTM-related materials since last week, but none seems to alter the picture before us to any great extent.