

**SMELT WORKING GROUP**  
**Monday, February 17, 2009**

WEEKLY ADVICE FOR THE CALIFORNIA DEPARTMENT OF FISH AND GAME  
FOR LONGFIN SMELT

**Advice for week of February 17:**

The Smelt Working Group provides no new advice; previous longfin smelt advice was to **maintain the 14-day average combined OMR flow no more negative than -3500 cfs.**

**Basis for advice:**

Our concern level for **longfin smelt** is based on:

- (1) longfin smelt juvenile and adult abundance remains low.
- (2) longfin smelt larvae were again detected at 9 of 12 central and south Delta Longfin Smelt 2084 trigger stations during the February 2-5, 2009 Smelt Larva Survey;
- (3) at all but 2 of the trigger stations longfin smelt larva density was relatively low (0 to 14 larvae per tow);
- (4) particle tracking modeling predictions that current OMR levels will not strongly affect longfin smelt larvae at high density locations in the western Delta/confluence area, but would affect the singlet central Delta high density location (812);
- (5) combined exports have been at about 4000 cfs since 12 February, and OMR has trended steadily more negative. Current OMR is probably approaching our previous advice level of -3500cfs: USGS 14 day and 5 day measures have not been updated since 12 February, but provisional 5-day OMR is -2590 cfs.

The Smelt Working Group longfin smelt recommendation is based on discussion of the following information; adult distribution information has been updated:

1. Size of spawning population. The spawning population remains low. The 2008 FMWT longfin smelt index of 139 was the fifth lowest on record.
2. Water temperatures. Water temperature dropped (3 station average was 10.1° C on 17 February) is currently remains in the range suitable for longfin smelt spawning and incubation.
3. Recent salvage. No longfin smelt have been salvaged since December 1. Longfin smelt larvae are not identified or counted in salvage.
4. Adult distribution. February survey information was not available for the conference call, but depicts only a few adult longfin smelt in the Delta. The February Bay Study

survey, caught 4 adult longfin smelt Sacramento River in the vicinity of 3-mile Slough and 3 adult longfin smelt in the San Joaquin River just upstream of the Highway 160 bridge in Antioch.

5. Larva and juvenile distribution. The 2084 longfin smelt (LFS) larva trigger (detection at 6 or more of 12 central and south Delta criteria stations) was tripped during the January 20-24 Smelt Larva Survey (SLS). The February 2-5 SLS detected a similar LFS larva distribution, but densities increased in the central and south Delta in comparison to the January 20-24 SLS. With the exception of stations 809 and 812, longfin smelt larva densities remained relatively low in the central and south Delta, particularly in comparison to Sacramento River densities

([http://www.delta.dfg.ca.gov/data/sls/CPUE\\_Map.asp](http://www.delta.dfg.ca.gov/data/sls/CPUE_Map.asp)). Total larva numbers in the central and south Delta trigger region represent about 9% (n=140) of the partial total catch (i.e., n = 1494, catch based on 28 of 35 samples processed; longfin smelt larvae will likely be found in most or all of the remaining samples). Particle Tracking Modeling (see below) suggests that 812 is the only high density location that would be affected by current OMR flows; other lower density locations farther east and south would also be affected.

6. Particle tracking results. Results from particle tracking modeling (PTM) runs based on hydrology during three low outflow years (1992, 2002, 2008) and using surface oriented particles indicated that substantial fractions of particles from San Joaquin River stations 812, 815, and 906 would be drawn into the export pumps (about 45 to almost 90%, with the highest percentage from particles injected at station 906, the most eastern station) at an OMR of -3500 cfs. Currently, OMR is substantially less negative than -3500 cfs (about -2300 cfs for USGS 14-day average) and larva densities are relatively low at most San Joaquin River locations (approx.  $\leq 70$  larvae per 1000 cubic meters filtered) and most locations farther south within the Delta. The exception is station 812 (319 larvae per 1000 cubic meters filtered). At current OMR flows about 30% of particles from station 812 would be entrained in 90-days. These entrainment percentages would increase rapidly at more negative OMR flows, as would entrainment of particles from the Sacramento River. Densities in the Sacramento River near 3-Mile Slough are relatively high ( $> 800$  per 1000 cubic meters filtered).