SMELT WORKING GROUP
Monday, February 23, 2009

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

Advice for week of February 23:

The Smelt Working Group provides no new advice and believes it can relax previous longfin smelt advice to maintain the 14-day average combined OMR flow no more negative than -3500 cfs given the strong, positive Qwest flows and Sacramento River flows**.**

Basis for advice:

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

(1) longfin smelt juvenile and adult abundance remains low.
(2) no new longfin smelt larvae distribution data are available. During the February 2-5, the Smelt Larva Survey again detected longfin smelt larvae at 9 of 12 central and south Delta Longfin Smelt 2084 trigger stations;
(3) during Feb 2-5, at all but 2 of the trigger stations longfin smelt larva density was relatively low (0 to14 larvae per tow);
(4) outflow surpassed 30,000 cfs and Qwest exceeded 10,000 cfs on February 18 and likely shifted longfin smelt larvae distribution downstream, away from the area of export influence. Exports are predicted to remain <6000 cfs through the end of February.

The Smelt Working Group longfin smelt advice 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 (3 station average was 10.6º C on 22 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. 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. No information is available yet from the February 17-19 Smelt Larva Survey. Increased river flows during and after the February 17-19 survey probably shifted larva distribution downstream, away from the area influenced by the export pumps. 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 (most recent data available) 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 during February 2-5, particularly in comparison to Sacramento River densities (http://www.delta.dfg.ca.gov/data/sls/CPUE_Map.asp). Total larva numbers in the central and south Delta trigger region represented 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 was the only recent high density location that would be affected by current OMR flows, but this effect would be diminished by current Qwest 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. Strongly positive Qwest flows (5000 cfs or more) counteract negative OMR effects for particles located in the San Joaquin River and south Delta near Franks Tract. Currently, Qwest is greater than positive 5000 cfs and OMR is less negative than -3500 cfs (about -3000 cfs for USGS 5-day average). Presumably larva densities were relatively low last week at most San Joaquin River locations and most locations farther south within the Delta; larva densities in the San Joaquin River were further reduced by recent Qwest flows.