

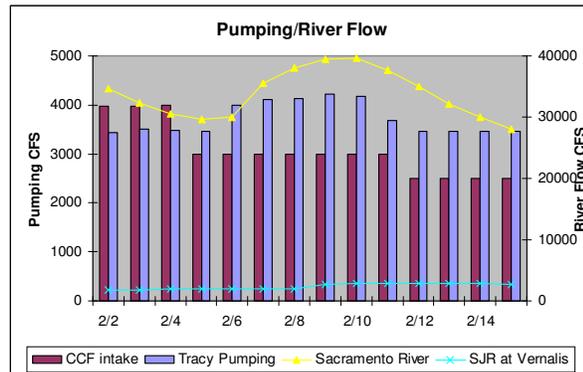
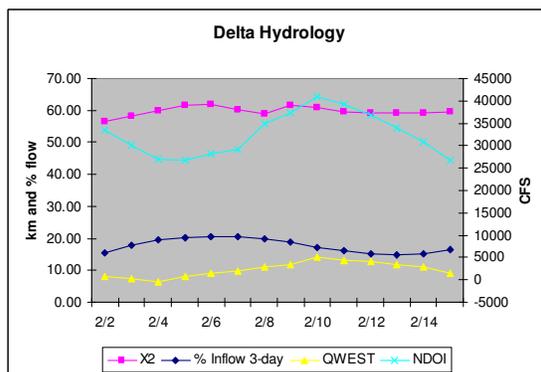
Recommendation for the week of February 16, 2010:

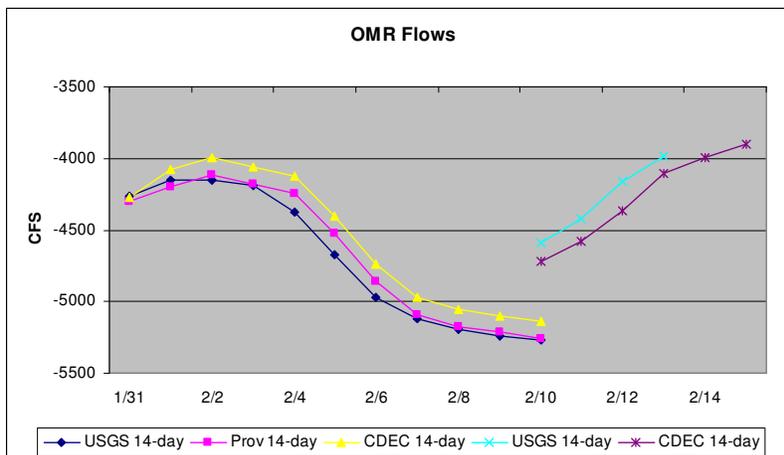
The three-day three-station average water temperature has now exceeded 12⁰C, indicating that temperatures are now appropriate for spawning. However, given incubation rates at 12⁰C, the Working Group does not expect that larvae will enter the water column for about two more weeks.

Considering that no salvage of delta smelt has been reported at either the CVP or SWP since February 10, current hydrological conditions, preliminary results from the SKT #2, and the planned operations of the projects (approximately 5900 cfs combined exports), the SWG believes that the risk of entrainment for delta smelt is low. The SWG therefore recommends that OMR flow be no more negative than -5000 cfs on a 14-day average (no more negative than -6250 cfs on a 5-day average), as allowed under the RPA. The Working Group will continue to monitor salvage, survey data, and hydrological conditions and reconvene February 22 to discuss the potential to modify the recommendation. If salvage increases, the Working Group will reconvene later in the week for further discussion.

1) Current environmental data.

- **Temperature** for the 3 station average is 12.6 C.
- **OMR** USGS tidally-averaged OMR as of February 13 is -3982 cfs (average from February 10 through 13). OMR estimate from CDEC as of February 15 is -3903 cfs (average from February 10 through 15).
- **Flow** Sacramento River inflow is about 28,000 cfs and San Joaquin 2700 cfs. The Projects are targeting SJR flows of 2280cfs by the end of the month. The E/I ratio is about 16.5%, X₂ is holding at around 59 km, QWEST is positive at about 1382 cfs and NDOI is 26813 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:

Spring Kodiak Trawl #2 was in the field February 8 through 11. Preliminary results include stations throughout the Delta and eastern Suisun Bay. Western Suisun Bay and Montezuma Slough results are still pending and are anticipated later today. Preliminary results indicate that 18 fish were collected, 7 delta smelt from 715, 3 from 809, 2 each from 719, 716, and 513, and 1 each from 706 and 519. Some of the males collected were ripe, whereas all females were in pre-spawn condition. It is possible that, due to the very low numbers of fish collected in SKT #2, some ripe females may have gone undetected in the system. Only 9 females had been processed in the SKT #2 by the Working Group call, which is too small a sample size to determine whether or not spawning has begun with any certainty. SLS #4 is in the field this week. Results from larval surveys and the SKT are available online at: <http://www.delta.dfg.ca.gov/delta>.

3) Salvage

One delta smelt was salvaged on February 10 (expanded to 4 fish) at the CVP. The cumulative total of delta smelt salvage (expanded) for the season is 28. The total allowable take for adults under the Biological Opinion is 123, cumulative, for the season. Following the call, the Service was notified that one ripe male delta smelt was salvaged at the CVP during the 8:00 am collection on Tuesday (February 16). This information was forwarded to the Working Group. Total adult salvage for the season is 32 (expanded).

4) Expected Project Operations

The Projects expect to maintain export levels to maintain OMR at no more negative than -4000cfs. Total exports are expected to remain at approximately 5900 cfs.

5) Particle Tracking Modeling

PTM results based on 31-day scenarios with OMR set at -5000 cfs, -4000 cfs, -3000 cfs, and -2000 cfs were provided by DWR, but were not discussed during the call. PTM was not

requested for the SWG call on February 22 because it does not apply to adults or to eggs attached to the substrate.

6) Discussion for Recommendation

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

Action 2 of the biological opinion, which is intended to protect adult delta smelt after the first flush, includes a range of OMR flow from -1250 cfs to -5000 cfs. Action 3, which is intended to protect larvae and juvenile delta smelt, includes the same range of OMR flow. The BO also provides guidance to assist in the discussion of where to set the OMR flows within this 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 high would be set so as to reduce that risk. The risk factors are (1) evidence of migration, (2) fish occurring in the south or central Delta and (3) evidence of entrainment. Because the Working Group believes delta smelt are “holding” in the system, awaiting the start of spawning, and that the majority of fish have completed their migration, and as 1 additional fish has been salvaged in the last week, it is appropriate to consider the low-entrainment risk scenario. The Working Group was advised via e-mail of the salvage of an additional delta smelt; however, this did not change the Working Group’s assessment that the risk of entrainment is currently low.

It is the intention of the B.O. to avoid salvage of delta smelt and to minimize salvage when it cannot be avoided. The Group believes it possible that the anticipated “peak” of salvage discussed last week was avoided. The Working Group felt that the strong protective action recommended last week could be relaxed, within the overall range provided in the RPA.

The Working Group discussed the status of spawning for the species. The Group agreed that some spawning may have already begun, but that most males are likely holding, waiting for the females to be ready to spawn. The group felt that widespread spawning was likely within the next couple of weeks. Delta temperatures are 12.6C. At that temperature, incubation will take approximately 2 weeks.

Next Meeting: Monday, February 22, 2010 at 10 am

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

Advice for week of February 16:

The Smelt Working Group believes that OMR advice of -5000 cfs for delta smelt will provide protection for longfin smelt.

Basis for advice:

The 2009 State Water Project 2081 for longfin smelt states that advice to the DFG Director shall be based on:

1. Adult Salvage – total adult ($\geq 80\text{mm}$) longfin smelt expanded salvage (SWP+CVP) for December through February > 5 times the Fall Midwater Trawl longfin smelt annual abundance index.
2. Adult abundance, distribution or other information indicates that OMR flow advice is warranted.
3. Larva distribution in the Smelt Larva Survey or the 20mm Survey finds longfin smelt larvae present at 8 of 12 Central and South Delta sampling stations in 1 survey (809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918, 919).
4. Larva catch per tow exceeds 15 longfin smelt larvae or juveniles at 4 or more of the 12 survey stations listed.

Current Information

No adult longfin smelt were salvaged in the past week and none have been salvaged since the December 1, 2009 criterion period for salvage began. Adult longfin smelt have only rarely been salvaged after mid-February.

No adult longfin smelt were collected upstream of the confluence by Bay Study in February.

On February 1-2, longfin smelt larvae were found at 9 of 12 south and central Delta criteria stations during the third Smelt Larva Survey (Table 1). Total catch at these stations represented about 8% of the longfin smelt larvae caught during survey 3 (the pattern and proportion is the same for recently hatched larvae $< 10\text{mm}$ [see Smelt Larva Survey web site, select Longfin Smelt $< 10\text{mm}$ under Select Species]).

Discussion

The distribution information above was used to develop OMR flow advice. The larva criteria trigger occurred in SLS survey 2 and outflow has been insufficient to reset triggers. Based on a larva/juvenile trigger, advice can restrict OMR flow levels to between -1,250 and -5000 cfs on a 14-day running average and the 5-day running average is within 25 percent of the required OMR flow. Outflows did not reach trigger re-set thresholds (see Figure 1 and 2 below, 55,000 cfs for Sacramento River at Rio Vista; 8,000 for San Joaquin River at Vernalis).

Recent positive Qwest (Figure 3) would have transported longfin smelt larvae from the San Joaquin River and Franks Tract portion of the south Delta westward toward the confluence, reducing their risk of entrainment. Presuming these larvae have been dispersed downstream in the past week. Thus, relaxing OMR to -5000 cfs should affect $< 8\%$ of the longfin smelt larvae based on SLS survey 3 data for criteria station sum CPUE (longfin smelt $< 10\text{mm}$) and total sum CPUE (see SLS website reference above).

Particle tracking model output was not reviewed for this advice.

Figure 1. Tidally averaged discharge for Sacramento River at Rio Vista, posted as of February 16, 2010.

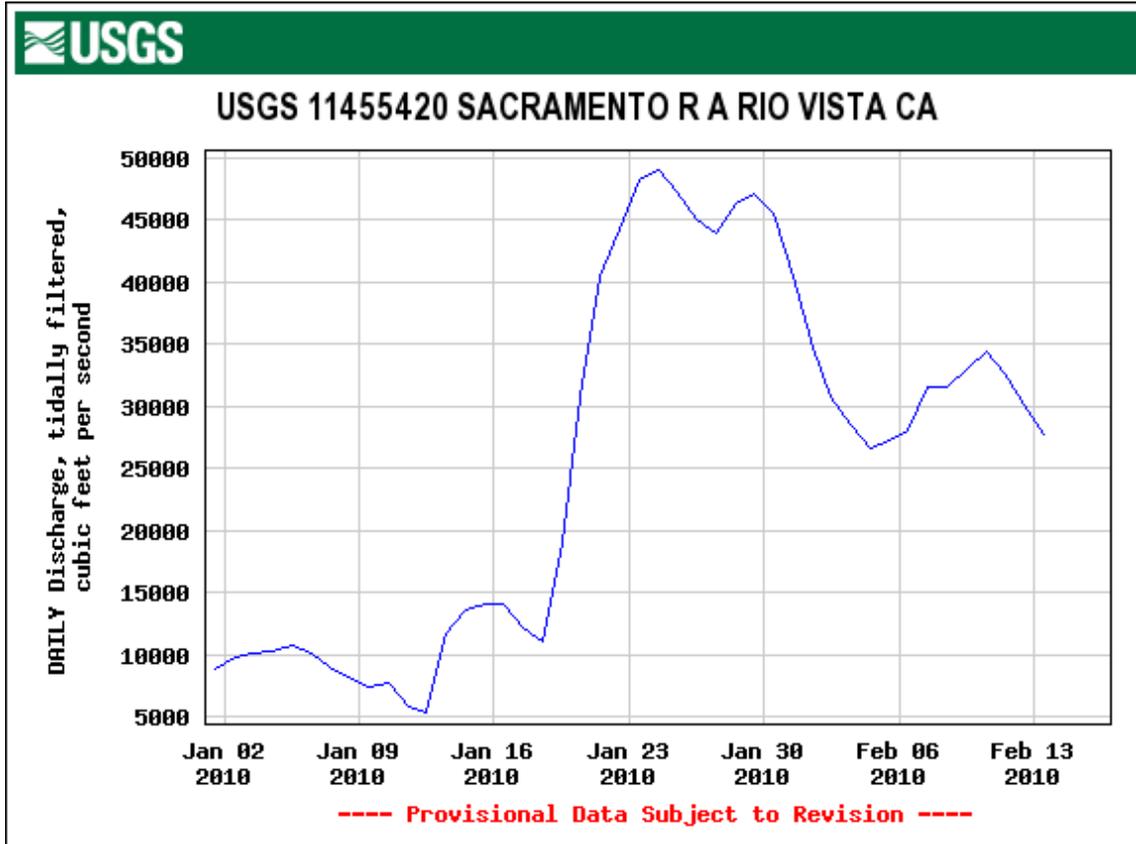


Figure 2. Clifton court intake, Tracy export pumping and daily river flows for the Sacramento River and San Joaquin River at Vernalis presented to the SWG February 16, 2010.

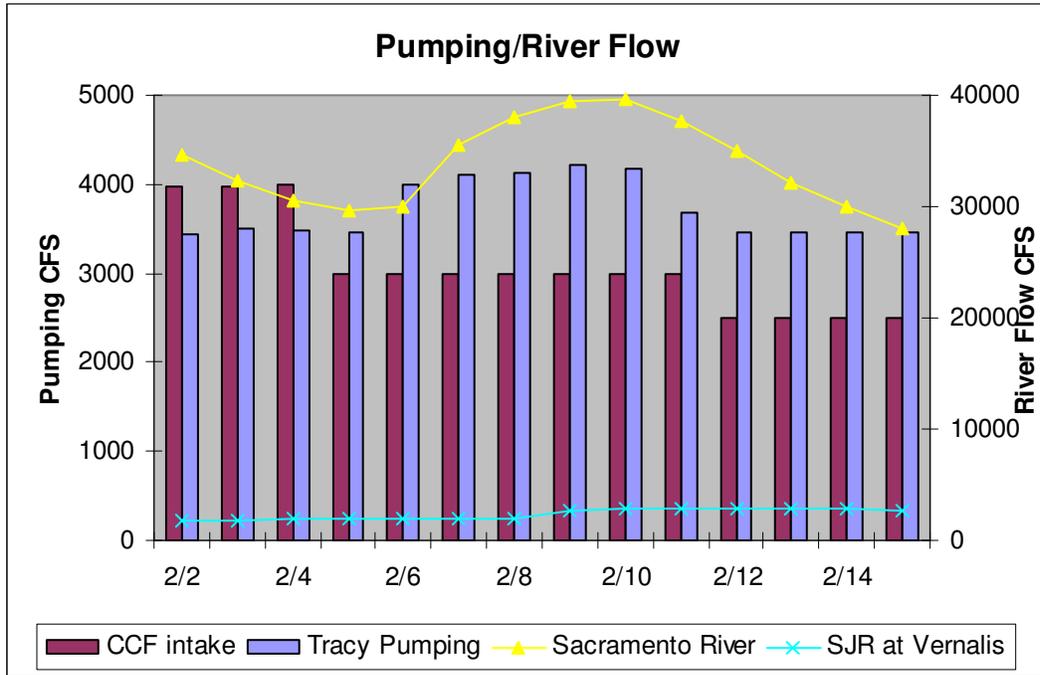


Figure 3. Location of X2, mean 3-day percent inflow diverted, Qwest and Net Delta Outflow Index presented to the SWG February 16, 2010.

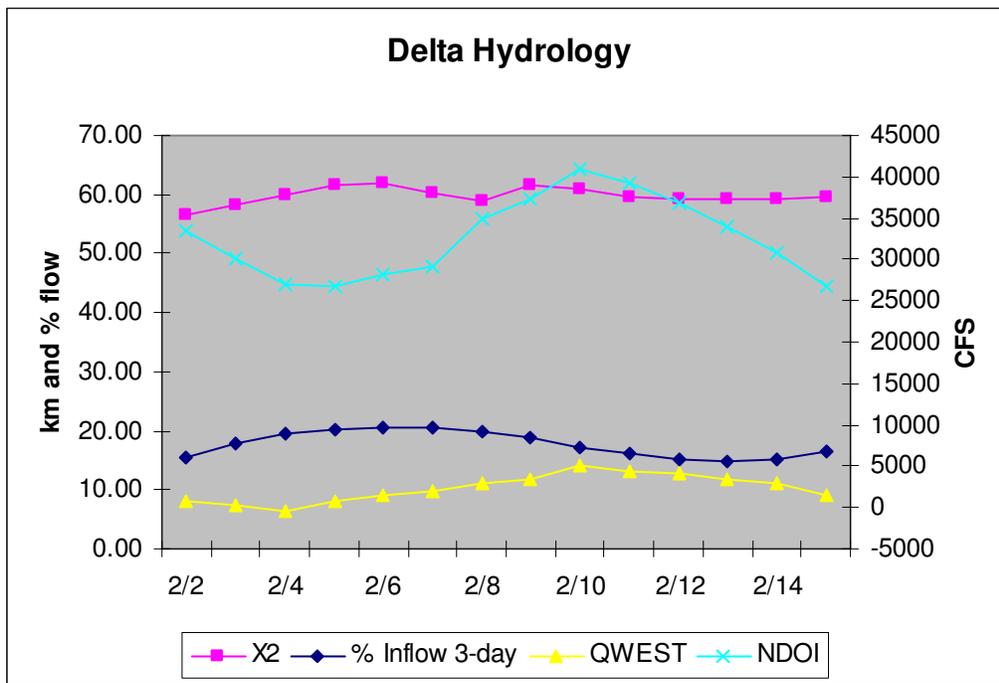


Table 1. Longfin smelt total catch by station for Smelt Larva Survey #3, February 1-2, 2010. Criteria stations for the State Water Project ITP are shaded.

Year	Survey	SLS Station	Sample Status	Species	Smelt Catch
2010	3	405	Processed	Longfin Smelt	83
2010		411	No Sample		
2010	3	418	Processed	Longfin Smelt	196
2010	3	501	Processed	Longfin Smelt	74
2010	3	504	Processed	Longfin Smelt	151
2010	3	508	Processed	Longfin Smelt	73
2010	3	513	Processed	Longfin Smelt	45
2010	3	519	Processed	Longfin Smelt	39
2010	3	520	Processed	Longfin Smelt	146
2010	3	602	Processed	Longfin Smelt	56
2010	3	606	Processed	Longfin Smelt	128
2010	3	609	Processed	Longfin Smelt	52
2010	3	610	Processed	Longfin Smelt	3
2010	3	703	Processed	Longfin Smelt	39
2010	3	704	Processed	Longfin Smelt	115
2010	3	705	Processed	Longfin Smelt	43
2010	3	706	Processed	Longfin Smelt	147
2010	3	707	Processed	Longfin Smelt	47
2010	3	711	Processed	Longfin Smelt	1
2010	3	716	Processed	Longfin Smelt	42
2010	3	723	Processed	Longfin Smelt	75
2010	3	801	Processed	Longfin Smelt	66
2010	3	804	Processed	Longfin Smelt	134
2010	3	809	Processed	Longfin Smelt	56
2010	3	812	Processed	Longfin Smelt	14
2010	3	815	Processed	Longfin Smelt	11
2010	3	901	Processed	Longfin Smelt	41
2010	3	902	Processed	Longfin Smelt	11
2010	3	906	Processed	Longfin Smelt	4
2010	3	910	Processed		0
2010	3	912	Processed		0
2010	3	914	Processed		0
2010	3	915	Processed	Longfin Smelt	4
2010	3	918	Processed	Longfin Smelt	4
2010	3	919	Processed	Longfin Smelt	1

SWP ITP Criteria Stations

Note: Sample processing completed on 2/5/10