Smelt Monitoring Team
Tuesday, April 14, 2020
11:00 AM – 12:00 PM

1. **Introductions**

2. **Relevant Actions and Triggers:**
Currently under larval and juvenile Delta Smelt protection of 2019 Biological Opinion:

"Reclamation and DWR to manage exports to limit entrainment to be protective of larval and juvenile Delta Smelt on or after March 15 of each year, if QWEST is negative, and larval or juvenile Delta Smelt are within the entrainment zone of the pumps based on real time sampling of spawning adults or young of life stages…

Reclamation coordinated with the Service on the Life Cycle Model entrainment module and proposes to operationalize results through the management of OMR reverse flows. When the secchi depth in the south Delta is less than one meter as determined by the weekly assessments based on EDSM and other available data, Reclamation will operate to OMR no more negative than -3,500 cfs. When the secchi depth in the south Delta is greater than 1 meter, Reclamation and DWR will operate to OMR no more negative than -5,000 cfs."

Currently under the Incidental Take Permit for Long-Term Operation of the State Water Project in the Sacramento-San Joaquin Delta (2081-2019-066-00) (relevant actions and triggers below):

8.5.1 SMT shall conduct weekly risk assessments to determine if a flow restriction is warranted and determine an OMR level between -1250 cfs and -5000 cfs throughout the OMR management season.

Onset of OMR management 8.3: From onset of OMR Management (initiated as described in 8.3.1 through 8.3.3) to the end (8.8) Permittee shall maintain a 14-day average OMR index no more negative than -5000 cfs, except during OMR Flex operations (8.7) or if a more positive OMR index is required.

Longfin Smelt larvae and juvenile protections 8.4.2:
1. Detections at 4 of the 12 SLS/20-mm stations in south and central Delta, or,
2. Catch per tow > 5 at 2 of the 12 SLS/20-mm stations

High flow off-ramp for Longfin Smelt 8.4.3: OMR management for LFS as described in 8.4.1 and 8.4.2 are not required, or would cease if previously required, when river flows are >55,000 cfs in the Sacramento River at Rio Vista or >8,000 cfs in the San Joaquin River at Vernalis. If flows subsequently drop <40,000 cfs in the Sacramento River at Rio

Vista or <5,000 cfs in the San Joaquin River at Vernalis, the OMR limit previously required as a part of 8.4.1 and 8.4.2 shall resume.

Delta Smelt larvae and juvenile protection 8.5.2: Cumulative 5 day salvage ≥ 1 + average of 3 years' prior FMWT indices (rounded down), Permittee shall restrict south Delta exports for 7 consecutive days to maintain a 7 day average OMR index no more negative than -5,000 cfs. If 5 day cumulative salvage threshold is met or exceeded, SMT should immediately convene to conduct a risk assessment (8.1.5.2) and determine future risk of entrainment and take of larval and juvenile DS. SMT may provide advice to further restrict south Delta exports to maintain a more positive OMR than -5000 cfs.

End of OMR management 8.8: OMR Management season through June 30, or until the species-specific off-ramps occur. LFS and DS offramp- Daily mean water temperature at Clifton Court (CCF) > 25°C for three consecutive days.

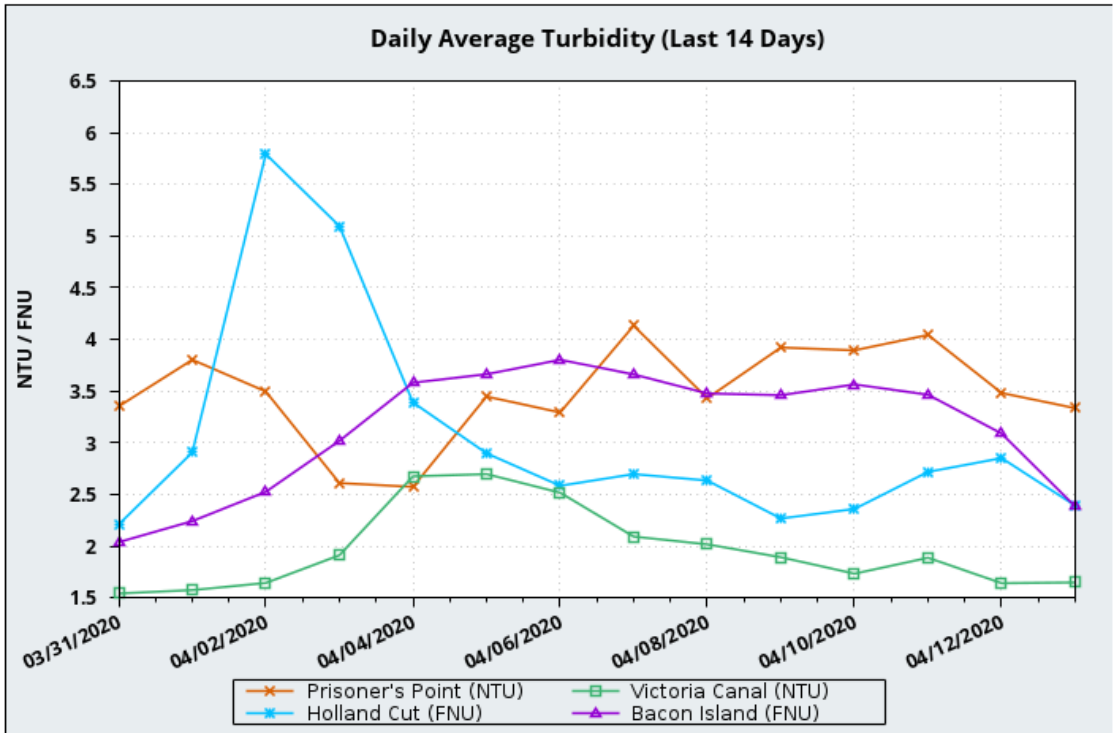
Barker Slough Pumping Plant Operations for Longfin and Delta Smelt Protection 8.12: During dry and critically dry years, from January 15 through March 31 for Longfin Smelt, and from March 1 through June 30 for Delta Smelt, advice for Barker Slough Operations is warranted if a larva is detected at SLS/20mm survey station 716 or the SMT determines that pertinent biotic and abiotic factors indicate that advice is warranted.

3. Operations

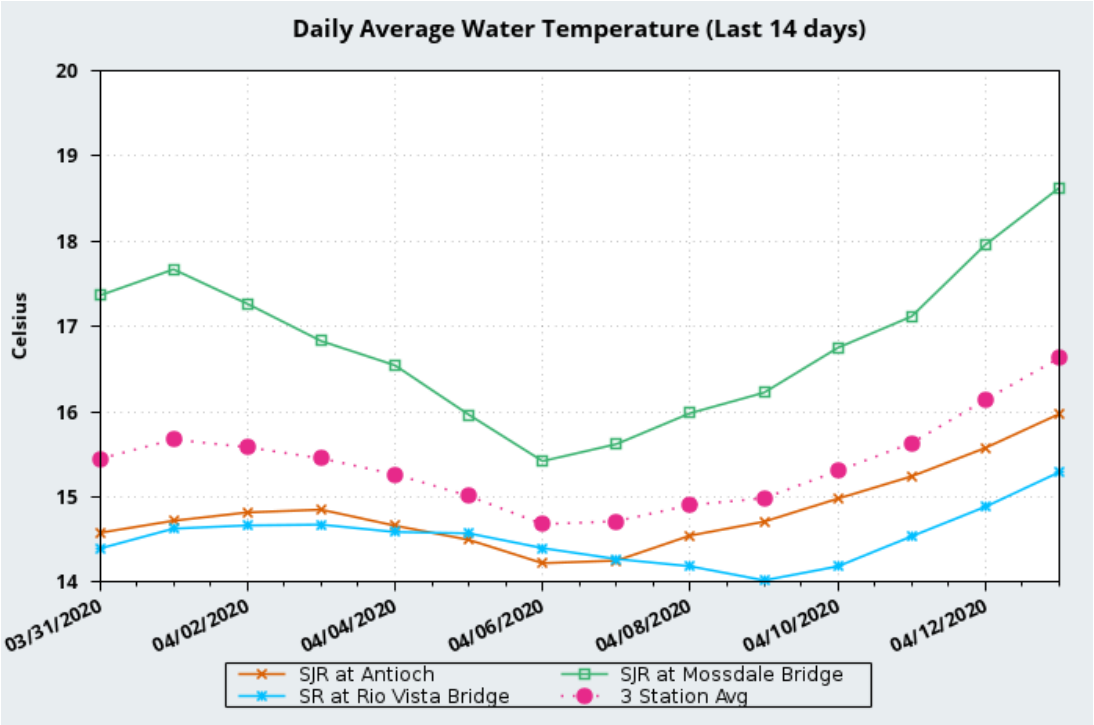
Tributary/Division	Projected Intended Operations and Ranges for week
Clear Creek	Whiskeytown Release: 200 cfs
Sacramento River	Shasta Storage: 3.72 MAF Shasta Release: 4,500 cfs – 9,000 cfs (The CVP is expecting a large increase in diversions demands along the Sacramento River and Shasta's releases will be increased consistent with the observed demands)
Feather River	Oroville Storage: 2.38 MAF Oroville Release to Feather: 1,350 cfs to 1,750 cfs
American River	Folsom Storage: .58 MAF Nimbus Release to American: 1,500 cfs
Stanislaus River	New Melones Storage: 1.91 MAF Goodwin Release to Stanislaus: 400 cfs to 1,500 cfs (Spring Pulse Flow)
Delta	Freeport: 10,000 to 13,000 cfs Vernalis: 1,700 to 3,500 cfs Delta Outflow index: 9,000 to 13,000 cfs Exports JPP: 800 to 2,700 cfs CC: 300 to 2,500 cfs Expected OMR Index: -1,000 to -2,000 cfs Maximum Allowable OMR: -5,000 cfs X2 position: 74 to 81 km QWEST: +1,000 cfs to +3,000 cfs DCC: Closed

Review of Environmental Conditions:

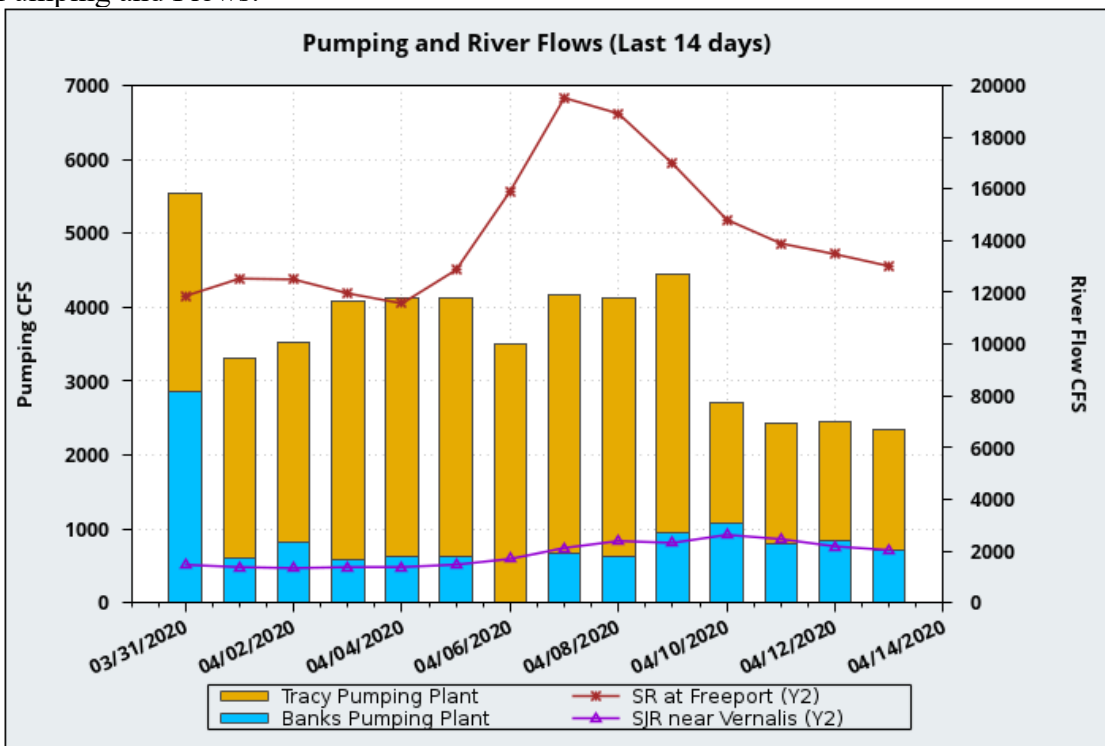
Turbidity:



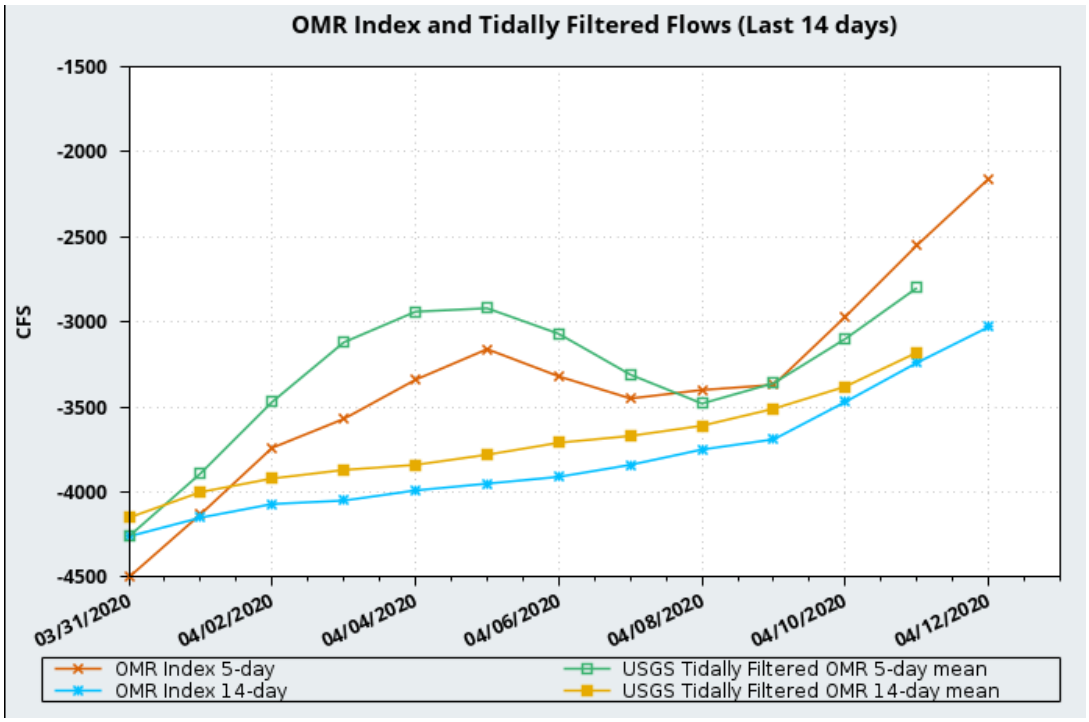
Temperature:



Pumping and Flows:



OMR Flows:



- As of April 13, the 3-station daily average temp: 16.63 degrees Celsius
- Daily average Turbidity at OBI on April 5 = 2.4 NTU; Current turbidity = 2.8 NTU
- Clifton Court daily average: 17.6 degrees C; 63.6 in Fahrenheit (0 days over 77 degrees F, so not triggered)

- Forecast for Antioch: sunny to mostly cloudy, no precipitation in next 7 days

The data presented for conditions was accessed via SacPAS: http://www.cbr.washington.edu/sacramento/data/delta_smelt.html

4. **Fish Abundance, distribution, and lifestage:**
   A. Survey Updates:

- - **20 mm survey 1** (completed in Mid-March): processing almost complete; 18 samples from 7 stations remain to be identified

    1. No delta smelt
    2. 284 (6-29mm) Longfin -- 29 in Central and South Delta (10% of current ID'd catch)

- There was no **20 mm Survey 2**
- Started **20mm Survey 3**: sampling 12 south and central priority stations; samples are being processed now. Full survey will not be implemented.

Discussion:

- Q: For SKT, will only have partial data for the year; will CDFW be able to produce an abundance index for smelt?
    1. A: Plan is not to produce an index given that it would not be comparable to other years but the final decision is still under discussion.

- -**EDSM** Week 17: Released the 1st week larval sampling abundance report estimate: 1, 307,999

- Finished second week of larval sampling on Friday; started week 3 of larval sampling, but 1 of 2 boats had an issue; borrowing a boat to get back on the water tomorrow
- Lab processing of samples – continuing to process samples from rest of last week
    1. Check website each day for updates on final data
    2. Initial osmerid results:
        1. Delta smelt: Thurs 4/9, 3 in Sacramento Shipping Channel (12.3-13.6 mm); Fri 4/10, 2 in Shipping Channel (15.7-19.4mm)
        2. Longfin smelt: 4/6, 177 in Suisun (7.3-27mm); more collected on other days are still undergoing processing

Note: the daily and weekly EDSM reports are found on the USFWS Lodi website: https://www.fws.gov/lodi/juvenile_fish_monitoring_program/jfmp_index.htm.

B. Salvage Monitoring:

- A larval Delta Smelt (12 mm) was reported in larval salvage monitoring at the CVP on 4.13.20. Because it was under 20 mm and detected in larval monitoring, it does not count towards the official total number of delta smelt salvaged during regular fish counts.

5. **Evaluation:**

A. **Is OBI turbidity likely to exceed 12NTU during the next week? What conditions are likely to create this turbidity event?**

Discussion:

- General agreement, that OBI turbidity will not exceed 12 NTU. All the releases occurring on the San Joaquin side are reservoir releases which tend to be clear.

B. After March 15 and if QWEST is negative, are larval or juvenile Delta Smelt within the entrainment zone of the CVP and SWP pumps based on surveys?

- *Group Consensus:* Based on the salvage data Delta Smelt have been detected in the entrainment zone, while QWEST was positive.

Discussion:

- QWEST is positive; 1000-3000 cfs OMR index anticipated this week. Larval delta smelt have been detected in the entrainment zone
- Yes, QWEST is positive, but smelt have been detected.
- There was a big wind turbidity event in February, and fish moved into OMR corridor; once they're in there, there is not much that can be done to get them to leave. Despite low turbidity conditions, they lived and spawned.
    1. The team need to put up an alarm when we have early season turbidity events; continuing to operate during those presents a risk of drawing in fish.
- Or they arrived at a completely different time and then spawned at some point
- There must have been more than one fish in order to spawn; could have also spawned in central delta or lower San Joaquin given that they are 12 mm in size.
    1. What is the ballpark number of days for larval delta smelt growth rates – from hatching to the 12mm salvage size?
    2. 0.3-0.5 mm/day, so ~0.4mm average; at least 12 days or as much as 3 weeks since beginning of yolk sac stage.
    3. That tracks with conditions from 3-4 weeks ago when OMR rates were more negative; perhaps they were drawn south by those flows.
- Would still emphasize that lower San Joaquin and Jersey Point have been remarkably clear; the kind of signal that would put any adults near the entrainment zone in the last two weeks… maybe that 1 wind event?
- Both hypotheses are viable.
- Fish can spawn no matter what the turbidity levels are given poor overall conditions. This tends to prove that fish can spawn at low levels of turbidity and low OMR flows.
- Turbidity has been between 2 and 4 NTU at Prisoners and Holland Cut; on April 10th, Holland point got to just above 4. Maybe that was elevated just enough to trigger movement south? But sometimes there are also just anomalies.

C. What is the OMR level to manage the annual larval entrainment based on DSM recruitment level from the FWS LCM? How does this information from the real-time spatial distribution of DSM operationalize the LCM?

-*Group Consensus:* The group needs more information regarding the LCM to answer this question.

Discussion:

- This question is odd based on what we are seeing this week; based on discussion last Thursday, USBR had not explicitly identified an annual larval entrainment they are managing to. Seems like it's about 5% but not stated.
- This question is more comparable to the salmonid annual salvage thresholds, which are calculated as a percentage of the Juvenile Production Estimate (JPE) and that was based on 90th percentile of a decade of data on salvage; 1.17% of JPE. Because Reclamation's smelt project description isn't structured this way, the group cannot speak to an annual entrainment level.
- Larval salvage is different than larval sampling conducted only for a short period.
- Perhaps question C does not work for us as an assessment question. Maybe we need to make it more smelt specific? Refine this question [**ACTION ITEM]**
- Seems like key point I am missing is: what does LCM predict about recruitment at this point for this year? It would be interesting to talk about what Delta Smelt recruitment levels might be this year.

D. What do hydrodynamic models, informed by EDSM or other relevant data, suggest the estimated percentage of larval and juvenile DSM that could be entrained may be?

Group Consensus: We don't have much data to inform this with limited fish survey sampling and no PTM to use for discussion of particle fate, however with more positive OMR flows, there is less risk of entrainment for Delta Smelt. The expected OMR Index Values is: -1,000 to -3,000 cfs for the next week. These flows are roughly equivalent to the most protective levels identified in the Biological Opinion.

Discussion:

- We currently have more positive OMR values; conditions are better than what we could prescribe for advice.
- We don't have monitoring to evaluate Delta Smelt entrainment at the Barker Slough pumping plant (North Delta). Though the amount of diversion is much lower than in the South Delta, Cache Slough region is still an important rearing area; so entrainment may not just be localized in the South Delta.

- NOTE: Last water year, 2019, we did not detect any larval delta smelt at federal facility. However, adult salvage was reported in 2019.

8. Additional Considerations

-Is the Longfin Smelt salvage event we're seeing indicative of Delta Smelt being entrained too? This is possible given the larval Delta Smelt detected at the CVP. As pumping slows down, larval sampling at the facilities may become more efficient, so it's possible that fish are being detected in salvage now that weren't being detected previously at higher pumping rates.

9. Next Meeting:

April 21, 2020 at 11:00am

California Department of Fish and Wildlife

Weekly Advice for Longfin Smelt

14 April 2020

Overview

Longfin Smelt larvae and juveniles are currently being entrained into south Delta export facilities. Juveniles and larvae within the south and central Delta are at high risk of entrainment, however, State Water Project south Delta exports are currently at minimum levels making further restrictions infeasible.

The period for Barker Slough advice ended on March 31.

Basis for Advice

The 2020 Incidental Take Permit for Long-Term Operation of the State Water Project in the Sacramento-San Joaquin Delta 2081-2019-066-00 (ITP) states that advice to Water Operations Management Team (WOMT) shall be based the following Conditions of Approval:

Adults

December 1 through February 28

8.3.3 Adult Longfin Smelt Entrainment Protection. After December 1, if an Integrated Early Warning Pulse Protection (Condition of Approval 8.3.1) has not yet initiated, Permittee shall reduce south Delta exports to maintain a 14-day average OMR index no more negative than -5000 cfs and initiate OMR management (Condition of Approval 8.3) if:

- Cumulative combined LFS expanded salvage (total estimated LFS counts at CVP and SWP salvage facilities) beginning December 1 through February 28 exceeds the most recent FMWT index divided by 10, OR
- Real-time monitoring of abiotic and biotic factors indicates a high risk of LFS movement into areas at high risk of future entrainment as determined by DWR and CDFW Smelt Monitoring Team staff.

When evaluating the possibility of LFS movement into the areas that may be subject to an elevated risk of entrainment, the SMT shall evaluate catch of LFS with fork length ≥60 mm by the Chipps Island Trawl as an early warning indicator for LFS migration movement into the Delta, in addition to other available survey and abiotic data.

8.4.1 OMR Management for Adult Longfin Smelt. From the onset of OMR Management (Condition of Approval 8.3) through February 28, the SMT shall conduct weekly, or more often as needed, risk assessments and decide whether to recommend an OMR flow requirement between -5000 cfs and -1250 cfs to minimize entrainment and take of adult LFS. The SMT may provide advice to restrict south

Delta exports for seven consecutive days to achieve a seven-day average OMR index within three risk categories:

- Low risk: OMR between -4000 cfs to -5000 cfs
- Medium risk: OMR between -2500 cfs to -4000 cfs
- High risk: OMR between -1250 cfs to -2500 cfs

The team shall provide its advice to WOMT (Condition of Approval 8.3.1) and operational decisions shall be made following the process described in Condition of Approval 8.1.4.

Larvae and Juveniles

8.4.2 Larval and Juvenile Longfin Smelt Entrainment Protection. From January 1 through June 30, when a single Smelt Larva Survey (SLS) or 20 mm Survey (20 mm) sampling period exceeds one of the following thresholds:

- LFS larvae or juveniles found in four or more of the 12 SLS or 20 mm station in the central Delta and south Delta (Stations 809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918, 919), or
- LFS catch per tow exceeds five LFS larvae or juveniles in two or more of the 12 stations in the central Delta and south Delta (Stations 809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918, 919).

Permittee shall restrict south Delta exports for seven consecutive days to maintain a seven-day average OMR index no more negative than -5000 cfs. Permittee shall also immediately convene the SMT to conduct a risk assessment (see Condition of Approval 8.5.1.2) to assess the risk of larval and juvenile LFS entrainment into south Delta export facilities, determine if an OMR flow restriction is warranted, and recommend an OMR flow limit between -1250 cfs and -5000 cfs. The SMT risk assessment and operational advice shall be reviewed by WOMT (Condition of Approval 8.1.3) via the Collaborative Real-time Decision-making process (Condition of Approval 8.1.4). Permittee shall operate to the export restriction and OMR flow target approved through Conditions of Approval 8.1.3 and 8.1.4. Each week the SMT shall convene to conduct a new risk assessment and determine whether to maintain, or offramp from, export restrictions based on the risk to LFS, or until the DS and LFS off-ramp has been met as described in Condition of Approval 8.8 (End of OMR Management).

From January 1 through June 30, DWR and CDFW SMT staff shall conduct weekly, or more often as needed, risk assessments (see Condition of Approval 8.5.1.2) to assess the risk of larval and juvenile LFS entrainment into the South Delta Export Facilities. As part of the risk assessment the SMT shall provide advice on the appropriate OMR flow targets to minimize LFS entrainment or risk of entrainment, or both. The SMT shall provide its advice to WOMT (Condition of Approval 8.1.3) and use the Collaborative Approach to Real-time Risk Assessment process described in Condition of Approval 8.1.4 to determine if OMR flow restriction is warranted and determine the OMR flow limit between -1250 and -5000 cfs. The OMR flow limit shall be in place until the next risk assessment conducted by the SMT determines that it is no longer necessary to minimize take or related impacts to LFS, or until the DS and LFS off-ramp has been met as described in the Condition of Approval 8.8 (End of OMR Management).

High Flow Off-Ramp and End of OMR Management

8.4.3 High Flow Off-Ramp from Longfin Smelt OMR Restrictions. OMR management for adult, juvenile, or larval LFS as described in Conditions of Approval 8.4.1 and 8.4.2 are not required, or would cease if previously required, when river flows are (a) greater than 55,000 cfs in the Sacramento River at Rio Vista or (b) greater than 8,000 cfs in the San Joaquin River at Vernalis. If flows subsequently drop below 40,000 cfs in the Sacramento River at Rio Vista or below 5,000 cfs in the San Joaquin River at Vernalis, the OMR limit previously required as a part of Conditions of Approval 8.4.2 and 8.4.2 shall resume.

8.8 End of OMR management

Conditions of Approval in place to minimize take of Delta and Longfin Smelt shall remain in effect until June 30th or until daily mean water temperature at Clifton Court Forebay (CCF) is greater than 25°C for 3 consecutive days.

Barker Slough

8.12 Barker Slough Pumping Plant Longfin Smelt Protection. Permittee shall operate the BSPP to protect larval LFS from January 15 through March 31 of dry and critical water years. If the water year type changes after January 1 to below normal, above normal or wet, this action will be suspended. If the water year type changes after January to dry or critical, Permittee shall operate according to this Condition of Approval.

From January 15 through March 31 of dry and critical water years, Permittee shall reduce the maximum seven-day average diversion rate as BSPP to less than 60 cfs when larval LFS are detected at Station 716. In addition, in its weekly meetings from January 15 through March 31, the SMT shall review LFS abundance and distribution survey data and other pertinent abiotic and biotic factors that influence the entrainment risk of larval LFS at the BSPP. When recommended by the SMT, and as approved through the decision-making process described in Conditions of Approval 8.1.3 and 8.1.4, Permittee shall reduce the maximum seven-day average diversion rate at BSPP according to the advice provided by the SMT.

Discussion of Criteria

Adults

The period relevant to adult Longfin Smelt protections ended on February 28th.

8.3.3 Adult Longfin Smelt Entrainment Protection. No adult Longfin Smelt were salvaged from December 1 through February 28 of Water Year 2020. See larvae and juvenile section for salvage of young of year LFS. The most recent FMWT index is 44.

8.4.1 OMR Management for Adult Longfin Smelt. Not applicable

Larvae and Juveniles

8.4.2 Larval and Juvenile Longfin Smelt Entrainment Protection

Note: Regular field sampling has been disrupted due to precautions in place to prevent the spread of COVID-19. Distribution data is limited.

SLS 6: (March 16 through 18) LFS larvae or juveniles were collected at 6 of the 12 relevant stations (809, 812, 815, 901, 902, 906). Catch per tow was greater than 5 at 3 of the 12 relevant stations (809, 812 and 901). See attachment "2020_SLS_Sur6_Smelt Catch_04062020.pdf" and the SLS webpage for reported catch and more information.

20 mm 1: (March 16 through 18) LFS larvae or juveniles were collected at 4 of the 12 relevant stations (809, 812, 815, 901). Average catch per tow was greater than 5 at 2 of the 12 relevant stations (809 and 812). See attachment "2020_20mm_Sur1_SmeltCatch_04062020.pdf" and the 20-mm webpage for reported catch and more information.

Salvage: An estimated 511 juvenile Longfin Smelt have been salvaged at the CVP south Delta export facility this water year. Most of this salvage (92%) has occurred during an ongoing salvage event that began on Thursday, April 9 (see table below). LFS larvae were detected at the federal facility on the March 27, 28, 29, 30 and April 3, 5, 6. One larval LFS was detected at the state salvage facility on April 1. Data for SWP Longfin Smelt salvage was not available.

Estimated salvage at CVP

Date	Estimated Salvage
4/9/2020	4
4/10/2020	8
4/11/2020	48
4/12/2020	100
4/13/2020	311.8

High Flow Off-Ramp and End of OMR Management

8.4.3 High Flow Off-Ramp from Longfin Smelt OMR Restrictions. Flow in the Sacramento and San Joaquin Rivers remained below the off-ramp thresholds of 55,000 cfs for the Sacramento River at Rio Vista and 8,000 cfs for the San Joaquin River at Vernalis.

8.8 End of OMR management. Daily average water temperature at CCF has not exceeded 25°C.

Barker Slough

8.12 Barker Slough Pumping Plant Longfin Smelt Protection. The period relevant to Barker Slough Operations for the Longfin Smelt protection ended March 31.

Current Conditions

As of April 13, 2020

Sacramento River flow at Freeport = 12800 cfs. San Joaquin River flow at Vernalis = 2000 cfs. X2 = 73 km. Qwest was approximately + 2600 cfs. Daily average OMR Index = -1400 cfs. Daily average water temperature at Clifton Court Forebay was 17.6°C.

Summary of Risk

A substantial LFS salvage event is underway. LFS juveniles and larvae in the south and central Delta are at high risk of entrainment, however, further OMR restrictions are not feasible. SWP exports are currently at minimum levels and further restrictions are not likely to result in an OMR level that would facilitate outmigration.

No advice was warranted for Barker Slough Pumping Plant Operations.

Attachments

Note: Attachments are imbedded PDFs. Double click images on following pages to open.

2020_SLS_Sur6_Smelt Catch_04062020.pdf

2020_20mm_Sur1_SmeltCatch_04062020.pdf

Table 1. Longfin Smelt catch per station from 2020 Smelt Larva Survey, Survey 6, which was in the field 3/16/2020 - 3/18/2020. Longfin Smelt incidental take permit criteria stations are highlighted in blue (Barker Slough Pumping Plant) and yellow (South Delta exports).

Study Year	Survey #	SLS Station	Turbidity	Sample Status	Species	Smelt Catch	MinOfLength	MaxOfLength	AvgOfLength	
2020	6	405	13.5	Processed	Longfin Smelt	14	6	8	6.857143	
2020		411		Not yet processed						
2020	6	418	17.7	Processed		No Smelt Catch				
2020	6	501	17.4	Processed	Longfin Smelt	18	6	10	8.055556	
2020	6	504	17.2	Processed	Longfin Smelt	2	7	10	8.5	
2020	6	508	16.9	Processed	Delta Smelt	8	5	6	5.75	
2020	6	508	16.9	Processed	Longfin Smelt	12	7	12	7.916667	
2020	6	513	14.8	Processed	Longfin Smelt	1	7	7	7	
2020	6	513	14.8	Processed	Delta Smelt	7	6	7	6.142857	
2020	6	519	23.7	Processed	Longfin Smelt	8	6	10	7.5	
2020	6	520	16.6	Processed		No Smelt Catch				
2020	6	602	18.9	Processed	Longfin Smelt	2	8	10	9	
2020	6	606	31.8	Processed	Longfin Smelt	51	7	15	8.98	
2020	6	609	25.8	Processed	Longfin Smelt	12	7	12	7.833333	
2020	6	610	20.7	Processed	Longfin Smelt	6	7	10	8.166667	
2020	6	703	13.2	Processed	Longfin Smelt	58	6	13	8.5	
2020	6	704	12	Processed	Longfin Smelt	17	7	11	8.294118	
2020	6	705	3.5	Processed	Longfin Smelt	92	8	17	11.14	
2020	6	706	7.2	Processed	Longfin Smelt	9	8	10	8.777778	
2020	6	707	4.4	Processed	Longfin Smelt	3	7	12	10.33333	
2020		711		Not yet processed						
2020	6	716	3.5	Processed	Longfin Smelt	1	7	7	7	Barker ITP
2020	6	723	3.7	Processed		No Smelt Catch				
2020	6	801	15.3	Processed	Longfin Smelt	15	6	11	7.1	
2020	6	804	9	Processed	Longfin Smelt	14	6	14	8.9	
2020	6	809	6.5	Processed	Longfin Smelt	6	8	12	9.3	
2020	6	812	5.1	Processed	Longfin Smelt	7	8	12	10.1	
2020	6	815	3.3	Processed	Longfin Smelt	4	11	13	11.8	
2020	6	901	7.7	Processed	Longfin Smelt	14	9	13	10.5	
2020	6	902	4.5	Processed	Longfin Smelt	2	10	11	10.5	
2020	6	906	2.8	Processed	Longfin Smelt	2	9	9	9.0	
2020	6	910	2.8	Processed		No Smelt Catch				
2020	6	912	2	Processed		No Smelt Catch				
2020	6	914	3.2	Processed		No Smelt Catch				
2020	6	915	5	Processed		No Smelt Catch				
2020	6	918	5.9	Processed		No Smelt Catch				
2020	6	919	1.7	Processed		No Smelt Catch				

SWP ITP Criteria Stations

Table 1. Delta Smelt and Longfin Smelt catch per station from 2020 20-mm Survey 1, which was in the field 3/16/2020 – 3/18/2020. These data are preliminary and subject to change.

Year	Survey	Station	Date	# Tows Processed	Species	Total Catch	Min Length	Max Length	Avg Length	
2020	1	328			Not Sampled					San Pablo Bay
2020	1	329			Not Sampled					
2020	1	334			Not Sampled					
2020	1	335			Not Sampled					
2020	1	336			Not Sampled					
2020	1	323		0	Not Yet Processed					
2020	1	340		0	Not Yet Processed					Suisun Bay & West
2020	1	342		0	Not Yet Processed					
2020	1	343		0	Not Yet Processed					
2020	1	344		0	Not Yet Processed					
2020	1	345		0	Not Yet Processed					
2020	1	346		0	Not Yet Processed					
2020	1	405		0	Not Yet Processed					
2020	1	411		0	Not Yet Processed					
2020	1	418		0	Not Yet Processed					
2020	1	501		0	Not Yet Processed					
2020	1	504		0	Not Yet Processed					
2020	1	519		0	Not Yet Processed					
2020	1	602		0	Not Yet Processed					
2020	1	606		0	Not Yet Processed					
2020	1	609		0	Not Yet Processed					
2020	1	610		0	Not Yet Processed					
2020	1	508		0	Not Yet Processed					Confluence
2020	1	513	16-Mar-20	3	Longfin Smelt	3	8	12	10.00	
2020	1	520		0	Not Yet Processed					
2020	1	801	17-Mar-20	3	Longfin Smelt	32	6	11	8.34	
2020	1	804	17-Mar-20	3	Longfin Smelt	21	8	14	11.43	
2020	1	703		0	Not Yet Processed					Sac. River System
2020	1	704	17-Mar-20	3	Longfin Smelt	15	6	21	8.33	
2020	1	705		0	Not Yet Processed					
2020	1	706	16-Mar-20	3	Longfin Smelt	32	7	20	11.50	
2020	1	707		0	Not Yet Processed					
2020	1	711		0	Not Yet Processed					
2020	1	716	18-Mar-20	3	No Smelt Catch	0				
2020	1	718	18-Mar-20	3	No Smelt Catch	0				
2020	1	719	18-Mar-20	3	Longfin Smelt	1	9	9	9.00	
2020	1	720	18-Mar-20	3	No Smelt Catch	0				
2020	1	723		0	Not Yet Processed					
2020	1	724	18-Mar-20	3	Longfin Smelt	1	10	10	10.00	
2020	1	726		0	Not Yet Processed					
2020	1	809	17-Mar-20	3	Longfin Smelt	16	9	13	11.56	Central & South Delta
2020	1	812	17-Mar-20	3	Longfin Smelt	6	9	11	10.17	
2020	1	815	17-Mar-20	3	Longfin Smelt	3	10	12	11.33	
2020	1	901*	16-Mar-20	3	Longfin Smelt	4	8	12	11.00	
2020	1	902	16-Mar-20	3	No Smelt Catch	0				
2020	1	906	17-Mar-20	3	No Smelt Catch	0				
2020	1	910	16-Mar-20	3	No Smelt Catch	0				
2020	1	912	16-Mar-20	3	No Smelt Catch	0				
2020	1	914	16-Mar-20	3	No Smelt Catch	0				
2020	1	915	16-Mar-20	3	No Smelt Catch	0				
2020	1	918			Not Sampled					
2020	1	919	17-Mar-20	3	No Smelt Catch	0				

Processing is complete through

* Indicates reduced tow time