

Smelt Monitoring Team
Tuesday, June 9, 2020
11:00 AM – 12:00 PM

Executive summary: In WY2020, larval and juvenile Delta Smelt have been detected in the Lower Sacramento River, Suisun Marsh, and Sacramento Deepwater Shipping Channel. One larval Delta Smelt (12 mm) was salvaged on April 13th at the Tracy Fish Collection Facility. The expected OMR Index values are -1,500 cfs to -5,000 cfs. Based on real-time spatial distribution, turbidity data, and available PTM scenarios. Reclamation identified -5,000 cfs as an OMR Index value to manage larval and juvenile entrainment levels. The SMT did not identify a recommended OMR Index value for this week because the reported projected OMR value is more positive than the range identified in the action. The SMT deems the projected OMR Index values of -3,000 cfs has less potential to entrain juvenile and larval Delta Smelt than an OMR Index value of -5,000 cfs.

1. Introductions

CDFW, NMFS, DWR, BOR, USFWS, K&W

2. Group Introduction:

The Smelt Monitoring Team (SMT) is a technical team that evaluates up-to-date biological and technical issues regarding Delta Smelt. The objective of the Smelt Monitoring Team is to provide information to the Water Operations Management Team (WOMT), Reclamation and California Department of Water Resources on measures to reduce adverse effects from Delta operations of the Central Valley Project (CVP) and the State Water Project (SWP) on Delta Smelt.

3. Group Norms and Team Expectations Document Reviewed:

Direct any questions about this document to your agency's respective LTO coordinator.

4. 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.”

End of OMR Management:

OMR criteria may control operations until June 30 or when the following species-specific off ramps have occurred, whichever is earlier:

- Delta Smelt: when the daily mean water temperature at CCF reaches 77°F for 3 consecutive days;

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):

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.

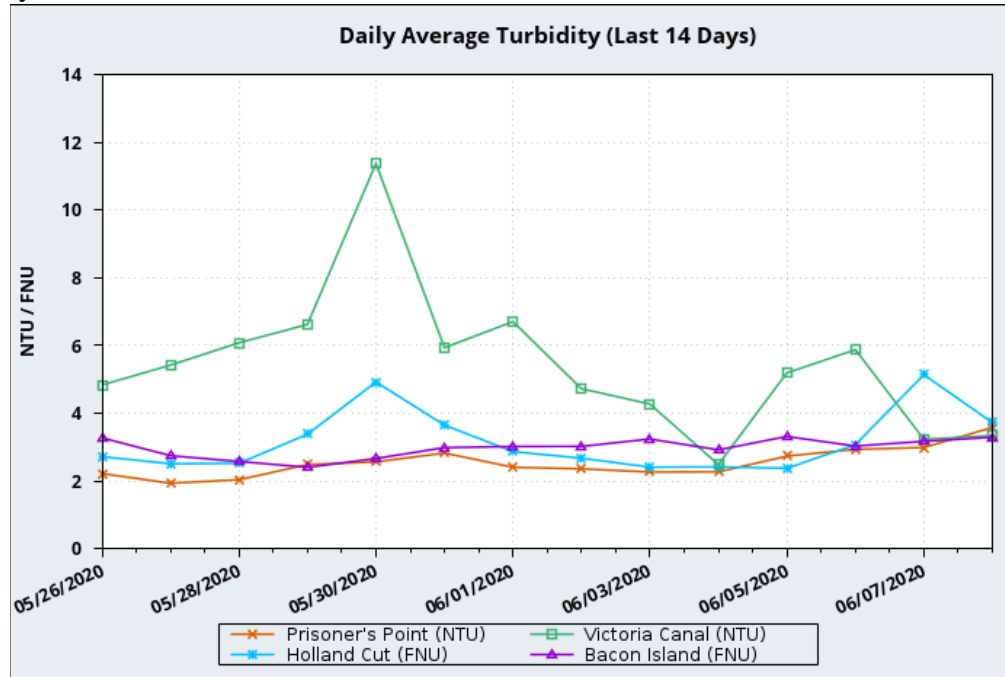
End of OMR management 8.8: OMR Management season through June 30, or until the species-specific off-ramps occur. LFS and DS offramp- Daily mean water temperature at Clifton Court (CCF) > 25°C for three consecutive days.

5. Operations

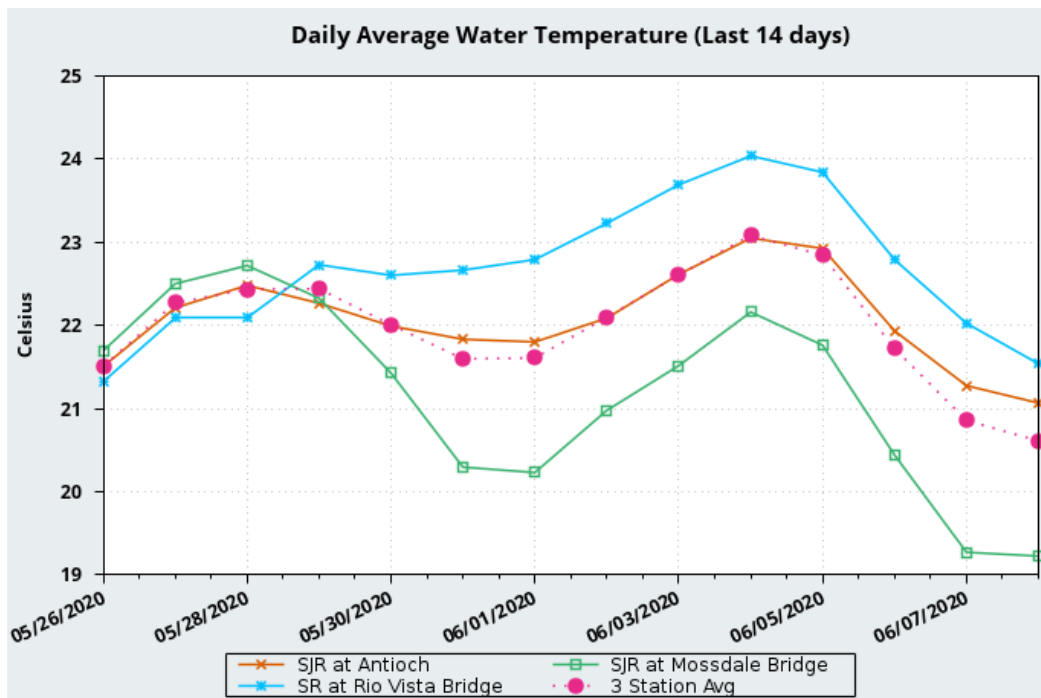
Tributary/Division	Projected Intended Operations and Ranges for week
Clear Creek	<ul style="list-style-type: none"> · Whiskeytown Release: 150-500 cfs (implementing spring pulse flow)
Sacramento River	<ul style="list-style-type: none"> · Shasta Storage: 3.53 MAF · Current Release: 10,500 cfs · Anticipated Weekly Range of Releases to Sacramento: 10,000 cfs to 12,000 cfs (As needed to support observed legal diversion demands on the Sacramento River in addition to Delta demands)
Feather River	<ul style="list-style-type: none"> · Oroville Storage: 2.42 MAF Current Release: 3,000 cfs · Anticipated Weekly Range of Releases to Feather: 2,500 cfs to 4,000 cfs (As needed to support Delta water quality obligations)
American River	<ul style="list-style-type: none"> · Folsom Storage: 0.79 MAF Current Release: cfs · Anticipated Weekly Range of Releases to American: 1,750 to 2,500 cfs (As needed to meet Delta water quality objectives)
Stanislaus River	<ul style="list-style-type: none"> • New Melones Storage: 1.81 MAF • Current Release to Stanislaus: 1500 cfs <p>Anticipated Weekly Range of Releases to Stanislaus: 800 cfs to 1,500 cfs (As needed to meet D-1641 flow requirements at Vernalis)</p>
Delta	<ul style="list-style-type: none"> • Freeport: 9,000 to 13,000 cfs • Vernalis: 800 to 1,800 cfs • Delta Outflow index: 6,800 to 8,000 cfs • Combined Exports: 1,100 to 4,800 cfs • JPP: 900 to 4,200 cfs CC: 200 to 1,600 cfs • Expected OMR Index Values:-1,500 to - 5,000 cfs • X2 position: 78 to > 81 km • QWEST: -1,500 to +2,500 cfs <p>DCC: Closed during week, open on weekend</p>

Review of Environmental Conditions:

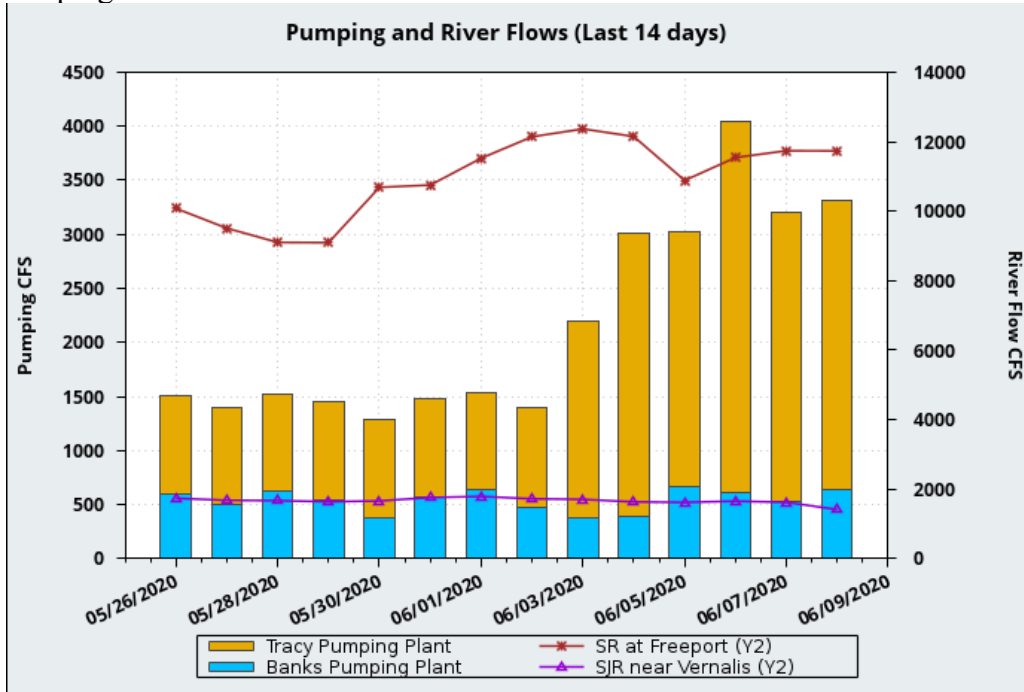
Turbidity:



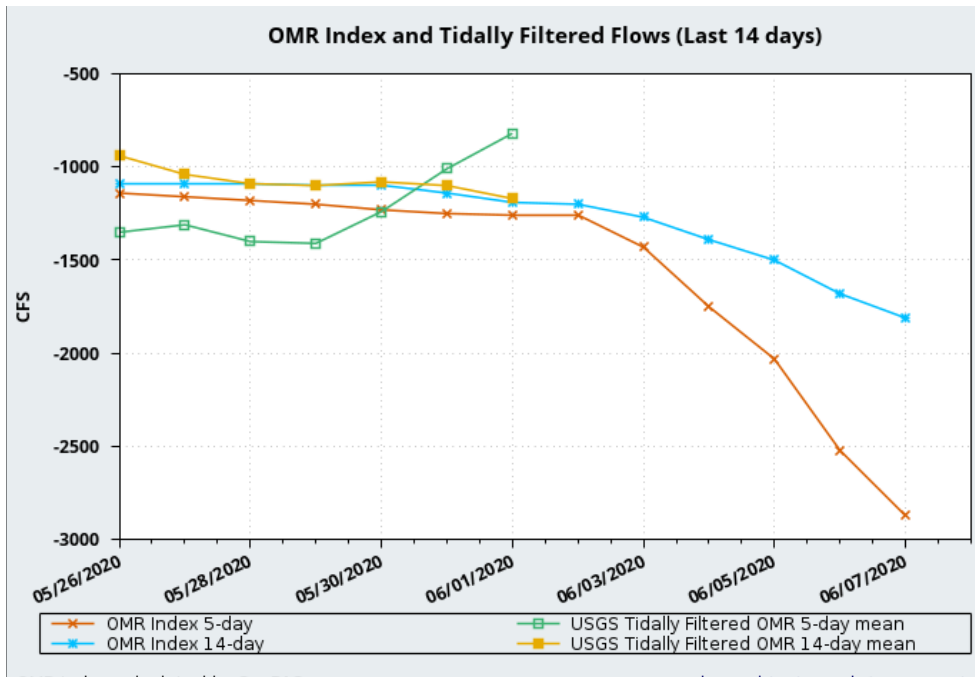
Temperature:

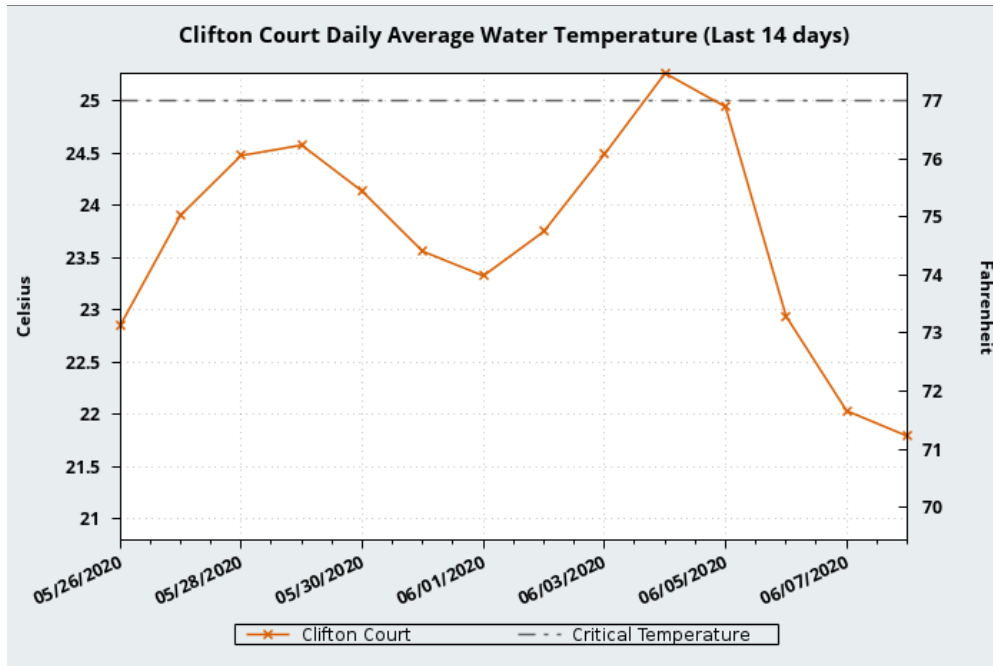


Pumping and Flows:



OMR Flows:





- As of June 8, the 3-station daily average temperature: 20.61°C
- Daily average turbidity at OBI on June 1 = 3.3 FNU; Current turbidity = 3 FNU
- Clifton Court daily average: 21.79°C; 71.22°F. The 77°F trigger was exceeded on June 4th. It then cooled back down. The three-day temperature trigger was not met.
- Forecast for Antioch: sunny to partly cloudy; NW/W winds up to 23 mph; no precipitation

The data presented for conditions was accessed via SacPAS:

http://www.cbr.washington.edu/sacramento/data/delta_smelt.html

6. Fish Abundance, distribution, and lifestage:

A. Survey Updates:

- 20 mm Survey 6 (May 25-June 1): all samples processed
 - o 210 longfin (22-39mm), 76% were downstream of confluence
 - o No delta smelt;
- 20 mm Survey 7 running June 8-12. Some issues with boats, so likely will have to cut some sites
- Tentative notice that Summer Tow Net will start on June 15th

-EDSM

- Published Week 9 (May 25-29) weekly report: no Delta Smelt caught, so no estimate was generated
- Finished 10th week of EDSM sampling last week and started 11th week yesterday; they will be sampling Monday through Friday. Preliminary results from last week:
 - o Delta Smelt:
 - 1 in Suisun Marsh (37mm, June 2nd)

- 1 in Deepwater Shipping Channel (38mm, June 2)
 - 56 detections this water year to date
 - Longfin Smelt:
 - 3 in Suisun Marsh (24-28.4 mm, June 1);
 - 2 in Suisun Bay on (22.5, 26 mm; June 3)
- https://www.fws.gov/lodi/juvenile_fish_monitoring_program/jfmp_index.htm.

B. Salvage Monitoring:

- No smelt in regular or larval sampling (larval data through 9:00 am 6/8/2020)
- State facility reduced 24% of their counts on June 6
- Federal facility reduced pumping (due to high debris loads) on June 5th, which impacted 25% of their counts

7. Evaluation:

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

Group Response: Turbidity at OBI is not expected to exceed 12 NTU in the next week. Daily average turbidity at Old River Bacon Island (Station ID: OBI) on 6/8/2020 was 3.3 FNU. The weather forecast does not predict precipitation events in the next seven days and the predicted west northwest, and west winds are not expected to raise turbidity past 12 NTU. The units of NTU and FNU may be used interchangeably for this station because the station has always historically recorded in FNU (June 5th 2020 DWR Memorandum YSI Turbidity Measurement).

Discussion: Are we worried about confusion between FNU and NTU for readers? Maybe we should add a clarifying sentence.

- a. Suggest reference memo directly. USBR will post memo online.

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 Response:* Larval and juvenile Delta Smelt have been detected in the Lower Sacramento, Suisun Marsh, and the Sacramento Deepwater Ship Channel. The Lower Sacramento River, Suisun Marsh, and Sacramento Deepwater Ship Channel are outside of the entrainment zone of the CVP and SWP pumps. However, the larval Delta Smelt observed at the CVP's Tracy Fish Collection Facility (TFCF) on 4/13/2020 indicates larval Delta Smelt may be present in the entrainment zone. Since this detection, no other larval, juvenile, or adult Delta Smelt have been seen in the entrainment zone of the CVP and SWP pumps. 20mm Survey 2 was cancelled due to COVID-19. 20mm Surveys have since been able to sample the South Delta. EDSM is not currently sampling the South

Delta stratum. The size and rarity of recently hatched Delta Smelt may limit the ability of salvage and surveys to detect Delta Smelt. In the Operations Outlook, QWEST continues to be predicted to be negative to positive between -1,500 cfs to +2,500 cfs and OMR Index values are bounded between -1,500 cfs to -5,000 cfs with an expected OMR Index around -3,000 cfs. The Delta Cross Channel Gates will open over the weekend and remain open for the summer and will create a positive response in QWEST and may facilitate outmigration.

Discussion:

Discussion:

1. As of June 12th, the cross channel gates will be open for the rest of the summer; amend that sentence.
2. Is it our intent to say what we expect OMR values to be or what is technically allowed?
 - a. OMR levels will most likely be around -3000 cfs. There is not enough water in the Delta to increase exports to drive OMR more negative. -5000 cfs is permitted by the salmon side of the BiOp, and currently, there are no triggers that would curtail it.
 - b. The predicted value should be included to bolster what we are basing advice on. Having a value within such a large range is useful.
3. Should the order of the questions be shifted? Or perhaps, just provide the PTM information as part of the update along with relevant environmental conditions. That way, the group has that context as they are answering the first three assessment questions.

C. Based on real-time spatial distribution of Delta Smelt and currently available turbidity information, what is the OMR level between -3,500 and -5,000 cfs that manages weekly entrainment in the context of annual larval and juvenile entrainment levels?

-Group Response: Within the previous 30 days, Delta Smelt have been detected in the Sacramento Deep Water Ship Channel in the North Delta and Suisun Marsh in the West Delta which are outside of the entrainment zone. However, the size and rarity of recently hatched Delta Smelt may limit the ability of salvage and surveys to detect Delta Smelt. South Delta CDEC reporting has shown isolated turbidity increases at Clifton Court (Station ID: CLC), but OBI is expected to remain stable. Off ramp criteria were not met because Clifton Court Forebay temperatures did not reach the 77 °F threshold for three consecutive days. Based on real-time spatial distribution, turbidity data, and available PTM scenarios Reclamation identified -5,000 cfs as an OMR level to manage larval and juvenile entrainment levels. The SMT did not identify a recommended OMR Index value for this week because the reported projected OMR value is more positive than the range identified in the action. The SMT deems the projected OMR Index values of -3,000 cfs

has less potential to entrain juvenile and larval Delta Smelt than an OMR Index value of -5,000 cfs.

Discussion:

1. Revise the response to include the fish reported by EDSM on the call.
2. Note: this question is an opportunity to fulfill part of ITP risk assessment that calls for OMR bins. This is just a procedural comment for the future.
3. There needs to be a distinction between the Smelt Team as a whole and the assessment USBR puts together. Suggested language: “The SMT did not identify a recommended OMR value for this week because the reported projected OMR value is more positive than the range identified in the action.”
 - a. From an operational perspective, how would we handle this kind of advice? If weekend tides push out, there could be an opportunity to increase exports to -5000 cfs. Would we need to reconvene the group, or are we ok with -5000 cfs?
 - b. We have to weigh how likely that is. Sounded like there would likely be not be enough water to increase exports. The Team has to give our best guidance based on the information we have at this time. If conditions change, it’s up to WOMT to decide. Last week, it seemed like WOMT supported operators ability to go higher if they could.
 - c. In the past, any SMT member could call for reconvening of group if they felt the conditions warrant.
4. The meaning of “consensus” – absolute agreement or agreement by the majority – needs to be more clearly defined for the group.
 - d. The process does not require consensus. We can identify disagreements. Answers to assessment questions now recorded as “Group Response” instead of “Group Consensus”.
 - e. We may need more guidance for next year on whether we should have a range of permitted OMRs or an actual estimate.
 - f. Would like to include language saying -3000 cfs would be more protective than -5000 cfs.
 - g. SMT concurred that an OMR of -3000 cfs possess less entrainment risk to Delta Smelt compared to an OMR of -5000 cfs.

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 Response: Larval and juvenile Delta Smelt in the South Delta are at high risk of entrainment into the water export facilities. The expected OMR Index values are bounded between -1,500 cfs to -5,000 cfs with an expected OMR Index value of -3,000 cfs. PTM results from 6/2/2020 suggest the low export scenario (-3500 cfs) results in <26%, and the high export scenario (-5000 cfs) results in <38% of particles injected into the Central Delta could arrive at the CVP and SWP after 21 days. The high export scenario results in <59% of particles being entrained into the Old and Middle River corridor. The modeled entrainment zone extends into Franks Tract under the OMR conditions in the Operations Outlook. These results leave a large number of the fates of injected particles unresolved. Under current OMR conditions particle movement may be limited due to the stagnant conditions in parts of the South Delta.

1. Discussion: Specify that we are expecting -3000 cfs and that is what we are basing our risk assessment on.

7. Delta Smelt ITP Risk Assessment:

- a. The main difference between the BiOp and ITP is OMR bins. For instance, with an OMR bins approach, the risk assessment will state that the SMT concurred that -3000 cfs was deemed sufficiently protective; -5000 cfs would increase the entrainment risk to fish in the central Delta. There have been no Delta Smelt detections in the South Delta since April 13th. The Draft Risk Assessment for the ITP covering Delta Smelt and Longfin Smelt will be distributed tomorrow. Everyone encouraged to contribute and provide input, as this risk assessment is a product of the SMT.

8. Barker Slough Update

- In the Delta Smelt protection time period. There have not been any detections of Delta Smelt at Station 716 by 20mm, or elsewhere in the vicinity by EDSM. Other than on May 30/31st, where turbidity was slightly elevated (just over 12 FNU), turbidity has been generally low, and conditions have not been conducive to Delta Smelt presence. No advice.

The Barker Slough visualization for data is now up on SacPas.

9. LONGFIN SMELT UPDATE:

- Delta temperatures are now above 20°C and all detections have been downstream of the Central and South Delta. As Longfin Smelt grow they transition downstream, away from the entrainment zone, therefore risk is currently considered low across all OMR bins.

10. Additional Considerations

- a. **Off-ramp temperatures** are recorded differently in different places (some are reported in F and some in C); in addition, there are some inconsistent numbers even within different sections of the BA that were written at different times. These concerns have been elevated for discussion at WOMT.
- o DWR distributed **final memo on YSI Turbidity measurements** (i.e., transition to FNU)
 - Expect this topic (inconsistency of turbidity measurements and the use of NTU in the BiOp) to be a WOMT issue for resolution; it has been tabled for several weeks but it is on the list of topics they know need to be addressed.
 - USFWS field surveys still collecting turbidity data Hach probes measuring in NTU, so they are interested in the comparisons; will reach out to DWR to discuss further.

11. Next Meeting:

June 16, 2020 at 11:00am

Weekly Advice for Longfin Smelt

09 June 2020

Summary of Risk

Current Lifestage(s) in the Delta: Juveniles

South Delta Entrainment Risk: Low

Advice: No OMR restrictions are warranted. Recent distribution data and abiotic conditions suggest that Longfin Smelt are not present within the hydraulic footprint of the export facilities. No Longfin Smelt were detected in the south or central Delta according to the most recently available data from 20mm Survey 6 and Enhanced Delta Smelt Monitoring (EDSM). Furthermore, daily average water temperature within the Delta is expected to increase above levels at which Longfin Smelt are typically detected.

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.

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).

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.

Discussion of Criteria

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. 20 mm Survey 2 was canceled. 20 mm Surveys 3 and 4 sampled the 12 south and central Delta stations listed in Condition of Approval 8.4.2. 20 mm Survey 5 sampled 43 of the 47 regular stations. Station 901 (Franks Tract in central Delta) was not sampled due to excessive vegetation.

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).

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).

20 mm 3: (April 13 through 15) One LFS larvae (FL = 15 mm) was collected at station 809 in in the lower San Joaquin River. See the [20-mm webpage](#) for reported catch and more information.

20 mm 4: (April 27 through 29) One juvenile LFS (FL = 22 mm) was collected at station 901 (Franks Tract).

20 mm 5: (May 11 through 18) sampled 41 of the 47 regular stations and did not report any Longfin Smelt in the south or central Delta. Stations 901, 720, 724, 726, 703, and 346 were not sampled. 20 mm Survey 5 collected 635 Longfin Smelt in Suisun Bay, Suisun Marsh and near the confluence of the Sacramento and San Joaquin Rivers. Fork lengths ranged from 16 to 32 mm.

20 mm 6: (May 25 – 29) sampled 42 stations and collected 210 juvenile Longfin Smelt with fork lengths ranging from 22 to 39 mm. No Longfin Smelt were detected in the 12 south and central Delta stations listed in Condition of Approval 4.5.2. See attachment “2020_20mm_Sur6_SmeltCatch_060820.pdf” for more details.

EDSM collected 3 juvenile Longfin Smelt in Suisun Marsh on June 1 and 2 in Suisun Bay June 3. Fork lengths ranged from 22.5 to 28.3 mm

Salvage: Longfin Smelt salvage has not been observed since May 17th. Total salvage to date is 1360 for SWP and 1326 for CVP. Longfin Smelt larvae were detected at the federal facility on the March 27, 28, 29, 30 and April 3, 5, 6, April 9 through 16, April 18, and April 28. Larval LFS were detected at the state salvage facility on April 1, April 10, April 13, and April 29. See the table below for a summary of salvage and larval detections.

Estimated salvage and larval detections at SWP and CVP for Water Year 2020. Note: Larval detections are reported as presence only.

DATE	State Daily Salvage	State Season Total	SWP Larvae Y or N	Federal Daily Salvage	Federal Season Total	CVP Larvae Y or N
3/17/2020	0	0	NC	4	4	N
3/24/2020	0	0	N	12	16	N
3/25/2020	0	0	N	8	24	N
3/27/2020	0	0	N	0	24	Y
3/28/2020	0	0	N	4	28	Y
3/29/2020	0	0	N	0	28	Y
3/30/2020	0	0	N	0	28	Y
4/1/2020	0	0	Y	8	36	N
4/3/2020	0	0	N	0	36	Y
4/5/2020	0	0	N	0	36	Y
4/6/2020	0	0	N	4	40	Y
4/9/2020	4	4	N	4	44	Y
4/10/2020	0	4	Y	8	52	Y
4/11/2020	0	4	N	48	100	Y
4/12/2020	2	6	N	100	200	Y
4/13/2020	6	12	Y	311.8	511.8	Y
4/14/2020	0	12	N	118.6	630.4	Y
4/15/2020	0	12	N	156.0	786.3	Y
4/16/2020	0	12	N	208.0	994.3	Y
4/17/2020	8	20	N	84.0	1078.3	N

4/18/2020	14	34	N	80.0	1158.3	Y
4/19/2020	8	42	N	0.0	1158.3	N
4/20/2020	0	42	N	12.0	1170.3	N
4/21/2020	4	46	N	28.0	1198.3	N
4/22/2020	8	54	N	0.0	1198.3	N
4/23/2020	12	66	N	16.0	1214.3	N
4/24/2020	28.0	94	N	12	1226.3	N
4/25/2020	94.0	188	N	8	1234.3	N
4/26/2020	218.0	406	N	12	1246.3	N
4/27/2020	230.0	636	N	0	1246.3	N
4/28/2020	58.0	694.0	N	12	1258.3	Y
4/29/2020	224.0	918.0	Y	16	1274.3	N
4/30/2020	118.0	1036.0	N	24	1298.3	N
5/1/2020	40.0	1076.0	N	4	1302.3	N
5/2/2020	24.0	1100.0	N	0	1302.3	N
5/3/2020	8.0	1108.0	N	4	1306.3	N
5/4/2020	18.0	1126.0	N	0	1306.3	N
5/5/2020	76.0	1202.0	N	0	1306.3	N
5/6/2020	76.0	1278.0	N	0	1306.3	N
5/7/2020	62.0	1340.0	N	0	1306.3	N
5/8/2020	12.0	1352.0	N	0	1306.3	N
5/9/2020	2.0	1354.0	N	4	1310.3	N
5/10/2020	0.0	1354.0	N	8	1318.3	N
5/11/2020	6.0	1360.0	N	4	1322.3	N
5/17/2020	0.0	1360.0	N	4	1326.3	N

8.8 End of OMR management. Daily average water temperature at CCF exceeded 25°C for 1 day on June 4th, and has since decreased below 25°C.

Current Conditions

As of June 8, 2020

Sacramento River flow at Freeport = 11,700 cfs. San Joaquin River flow at Vernalis = 1,400 cfs. X2 = 81 km and is expected to shift upstream. Qwest was approximately +2,000 cfs and may turn negative when DCC gates close. Daily average OMR Index = -3,300 cfs and is projected to be approximately -3000 cfs but may become as negative as -5000 cfs as CVP exports increase. Daily average water temperature at Clifton Court Forebay was 21.8°C and has decreased after reaching a high of 25.3°C on June 4.

Attachments

2020_20mm_Sur6_SmeltCatch_060820.pdf

Table 1. Delta Smelt and Longfin Smelt catch per station from 2020 20-mm Survey 6, which was in the field 5/25/2020 – 6/1/2020. These data are preliminary and subject to change.

Year	Survey	Station	Date	# Tows Processed	Species_	Total Catch	MinOfLength	MaxOfLength	AvgOfLength
2020	5	328		0	Not Sampled	0			
2020	5	329		0	Not Sampled	0			
2020	5	334		0	Not Sampled	0			
2020	5	335		0	Not Sampled	0			
2020	5	336		0	Not Sampled	0			
2020	5	323	28-May-20	3	No Longfin Smelt Catch	0			
2020	5	340	02-Jun-20	3	No Longfin Smelt Catch	0			
2020	5	342		0	Not Sampled	0			
2020	5	343		0	Not Sampled	0			
2020	5	344		0	Not Sampled	0			
2020	5	345		0	Not Sampled	0			
2020	5	346		0	Not Sampled	0			
2020	5	405	28-May-20	3	Longfin Smelt	2	29	31	30.00
2020	5	411	28-May-20	3	No Longfin Smelt Catch	0			
2020	5	418	28-May-20	3	Longfin Smelt	130	22	39	29.83
2020	5	501	29-May-20	3	Longfin Smelt	14	23	30	26.93
2020	5	504	26-May-20	3	No Longfin Smelt Catch	0			
2020	5	519	26-May-20	3	Longfin Smelt	2	26	30	28.00
2020	5	602	29-May-20	3	Longfin Smelt	7	26	29	27.71
2020	5	606	29-May-20	3	Longfin Smelt	4	24	33	29.00
2020	5	609	28-May-20	3	Longfin Smelt	2	24	24	24.00
2020	5	610	29-May-20	3	No Longfin Smelt Catch	0			
2020	5	508	26-May-20	3	Longfin Smelt	38	24	33	27.79
2020	5	513	27-May-20	3	Longfin Smelt	5	25	28	26.20
2020	5	520	26-May-20	3	Longfin Smelt	2	27	28	27.50
2020	5	801	27-May-20	3	No Longfin Smelt Catch	0			
2020	5	804	26-May-20	3	No Longfin Smelt Catch	0			
2020	5	703	28-May-20	3	No Longfin Smelt Catch	0			
2020	5	704	27-May-20	3	Longfin Smelt	4	24	29	27.00
2020	5	705	27-May-20	3	No Longfin Smelt Catch	0			
2020	5	706	27-May-20	3	No Longfin Smelt Catch	0			
2020	5	707	27-May-20	3	No Longfin Smelt Catch	0			
2020	5	711	28-May-20	3	No Longfin Smelt Catch	0			
2020	5	716	28-May-20	3	No Longfin Smelt Catch	0			
2020	5	718	28-May-20	3	No Longfin Smelt Catch	0			
2020	5	719	28-May-20	3	No Longfin Smelt Catch	0			
2020	5	720		0	Not Sampled	0			
2020	5	723	28-May-20	3	No Longfin Smelt Catch	0			
2020	5	724		0	Not Sampled	0			
2020	5	726		0	Not Sampled	0			
2020	5	809	26-May-20	3	No Longfin Smelt Catch	0			
2020	5	812	27-May-20	3	No Longfin Smelt Catch	0			
2020	5	815	27-May-20	3	No Longfin Smelt Catch	0			
2020	5	901	26-May-20	3	No Longfin Smelt Catch	0			
2020	5	902	26-May-20	3	No Longfin Smelt Catch	0			
2020	5	906	27-May-20	3	No Longfin Smelt Catch	0			
2020	5	910	27-May-20	3	No Longfin Smelt Catch	0			
2020	5	912	27-May-20	2	No Longfin Smelt Catch	0			
2020	5	914	26-May-20	3	No Longfin Smelt Catch	0			
2020	5	915	26-May-20	3	No Longfin Smelt Catch	0			
2020	5	918	26-May-20	3	No Longfin Smelt Catch	0			
2020	5	919	27-May-20	3	No Longfin Smelt Catch	0			

Processing is complete through 06/08/2020