State Water Project Incidental Take Permit Risk Assessment for Delta Smelt and Longfin Smelt

Section 1: Overview

Date: 11/9/2021

Life Stages Present:

Delta Smelt (DS): Sub-Adult
Longfin Smelt (LFS): Adults are not likely to be present within the Delta. Juveniles are present in Suisun Marsh, San Pablo and Central Bays. Adults are present in Suisun Bay and Suisun Marsh.

Advice to Water Operations Management Team (WOMT):

No Advice.

Risk Assessment:

Delta Smelt: Based on distribution patterns over the past decade and rare detections, DS are unlikely to be prevalent in the South Delta. Limited detection data support DS being present in the Sacramento Deep Water Ship Channel (SDWSC) and life history information support their presence downstream of the confluence of the Sacramento and San Joaquin Rivers. The last DS observed was in the SDWSC on 8/20/2021. The likelihood of DS subadult entrainment is low due to seasonal timing and spatial distribution. First flush conditions are not anticipated to occur within the next seven days. The regulations for Integrated Early Winter Pulse Protection does not go into effect until 12/1/2021.

Longfin Smelt: No adult LFS have been detected in Chipps Island Trawl or Enhanced Delta Smelt Monitoring (EDSM) in the Delta in recent sampling. Adult LFS have been detected in Suisun Marsh and Suisun Bay. LFS adults are expected to move into the Delta beginning in December. Based on distribution data and life history, they are not expected to be present in the Delta and therefore are not at risk of entrainment.

Section 1-A: Sacramento River and Confluence

Risk of entrainment into the central Delta and export facilities for DS and LFS in Sacramento River (8.1.5.2 C ii, iii, iv)

- Exposure Risk (Hydrology):
    - DS: Low
    - LFS: Low
- Routing Risk (Behavior and life history):
    - DS: Low
    - LFS: Low
- Overall Entrainment Risk
    - DS: Low
    - LFS: Low

Section 1-B: Central Delta

Risk of entrainment into the export facilities for DS and LFS in the central Delta (8.1.5.2 D iii, iv, v)

- Exposure Risk (*Low, Medium, High)*:
    - DS: Low
    - LFS: Low
- Change in exposure from previous week: *(Note: The change in risk compared to previous weeks is not required by the Incidental Take Permit [ITP]).*
    - DS: No change
    - LFS: No change
- Reporting Old and Middle River Index (OMRI) *(Number and range of OMRI bins will vary based on anticipated hydrology and operations)*
    - Relevant Conditions of Approval (COAs) are not active.

Section 2: Basis for Advice

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

List relevant Condition of Approval number and title based on species/life stage, time of year, etc.

Discussion of Conditions of Approval

Provide discussion addressing criteria for each Condition of Approval listed in "Basis for Advice" section. Refer to data below where appropriate.

COAs relevant to OMR management go into effect December 1st. The Smelt Monitoring Team (SMT) conducted a Risk Assessment based on COA 8.1.5.2 and noted that there is no regulatory mechanism in place to provide advice until December 1st.

Section 3: Hydrology and Operations

Assessment of hydrologic, operational, and meteorological information. 8.1.5.2 A.

Section 3-A: Water operations conditions. 8.1.5.2.A. i

- Antecedent Actions: *(e.g. Delta Cross Channel [DCC] gate closure and actions such as integrated early winter pulse protection, etc.)*
    - DCC is open.
    - OMR management has not been initiated.
- Controlling Factors: Water Quality
- Water Temperature:
    - Clifton Court Forebay (CCF) Daily Average Water Temperature = NA
    - 3 Station Average = 15.5°C
- Tidal Cycle: Anticipating the neap tide to occur on 11/12.
- Turbidity:
    - 8.3.1 Freeport 3-day average = 5.96 formazin nephelometric units (FNU)
    - 8.5.1 Old River at Bacon Island (OBI) Turbidity = NA
- Salinity: X2 = >82 km, estimated at 87.4 km for Sacramento River and 87.3 km for San Joaquin River.
- Hydrologic Footprint: No Particle Tracking Models were requested.

Section 3-B: Water operations outlook. 8.1.5.2.A. ii

- Outages
    - State Water Project (SWP): None
    - Central Valley Project (CVP): None

- Exports:
    - CCF: 5,000 to 2,000 cfs
    - Jones: 4,200 to 2,700 cfs
- Meteorological Forecast: Light precipitation today, drying throughout the week.
- Storm Event Projection: NA

Section 3-C: Projected conditions. 8.1.5.2.A. iii

- DCC Gates position: Open since 11/5.
- Sacramento River flow at Freeport: Yesterday 8,500 cfs and similar today, expected to increase to about 20,000 cfs with storm runoff and then decrease.
- San Joaquin River flow at Vernalis: 700 cfs on 11/8. Expected to stay between 600 and 900 cfs.
- Qwest: -1500 cfs. May move slightly positive with peak inflow next couple of days, then will become slightly negative again. Qwest calculation does not take Emergency Drought Barrier into account, so Qwest will not be a good indicator of hydrologic conditions that organisms are experiencing with drought barrier.
- OBI Turbidity: NA
- Expected changes in South Delta Exports: CVP currently at max, will decrease as inflows wane. SWP ramping up after outage last week, will increase to about 5,000 cfs in the next few days.
- NDOI: 2,000 cfs and is expected to increase with runoff from recent storm.
- Upstream releases:
    - Keswick = 3,600 cfs decreasing to 3,250 cfs baseflow on November 13th
    - Nimbus = 550 cfs
    - Goodwin = 200 cfs
    - Oroville = 950 cfs

Table 1: Comparison of OMR and OMR Index (5-day and 14-day averages for OMR Index and USGS gauge were reported on SacPAS website, accessed 9 November 2021.

Date	Averaging Period	USGS gauges (cfs)	Index (cfs)
NA	Daily	Not Reported	Not Reported
11/6/2021	5-day	-4,460	-6,100
11/6/2021	14-day	-4,140	-6,740

Section 4: Distribution and Biology.

8.1.5.2.B. Assessment of biological information for Delta Smelt and Longfin Smelt

Section 4-A: Delta Smelt population status 8.1.5.2.B. i

- EDSM: No Delta Smelt have been collected during recent sampling
- Fall Mid-water Trawl (FMWT) Index for Delta Smelt: September Index = 0.
- Delta Smelt life cycle model (LCM) discussion: NA
- Biological Conditions: NA
- % of population in Delta zones: NA
- Smelt Larva Survey (SLS) or 20mm Survey: SLS sampling will begin 12/13/2021.
- Salvage: No DS have been salvaged at either facility.

Section 4-B: **Longfin Smelt population status 8.1.5.2.B. ii.**

- FMWT Index: September Index = 1
- Other Surveys:
  - EDSM: 2 juvenile and 1 adult LFS (FL = 58-91 mm) were collected in Suisun Marsh on 11/2/2021. 1 adult LFS (FL 98 mm) was collected in Suisun Bay on 11/5/2021). 6 LFS (FL = 65-103 mm) were collected in Suisun Marsh on 11/8/2021.
  - Chipps Island Trawl: No LFS were reported in recent sampling.
- Salvage: No LFS have been salvaged at either facility.

Section 4-C: **Additional data sources to assess sensitivity to entrainment Delta.8.1.5.2.C & D. i**

Notes:

November 23rd SMT meeting will include briefing on plans for experimental release of DS.

DS spawning timing is variable, group agreed to call life stage “sub-adults” until at least January.

Post-season follow-up items list will be sent out with SMT notes, agencies requested to update where necessary.

Attachments: None