

## PARTICIPANTS

- California Department of Fish and Wildlife (CDFW)
- California Department of Water Resources (DWR)
- National Marine Fisheries Service (NMFS)
- State Water Resources Control Board (SWRCB)
- U.S. Bureau of Reclamation (USBR)
- U.S. Fish and Wildlife Service (USFWS)
- Kearns & West (KW)

## ACTION ITEMS

- SMT to discuss particle tracking model (PTM) logistics at the next meeting.

## MEETING SUMMARY

### PART 1: Updates on Water Operations and Biological Updates

#### Relevant Actions & Triggers

USBR reported on Old and Middle River (OMR) management measures. At this point the Integrated Early Winter Pulse Protection action is active as an operational protection. The purpose is to minimize project influence on migration or dispersal of Delta Smelt (DS). CDFW reported on the Incidental Take Permit (ITP) Conditions of Approval that are in effect. On December 18<sup>th</sup>, 2021 first flush was initiated triggering Condition of Approval (COA) 8.3.1 requiring south Delta exports be reduced for 14 consecutive days to maintain a 14-day average OMR index no more negative than -2,000 cfs. Starting January 3<sup>rd</sup>, 2022 The Smelt Monitoring Team (SMT) will consider COA 8.5.1 Turbidity Bridge Avoidance and 8.4.2 Larval and Juvenile Longfin Smelt Entrainment Protection. COA 8.3.3 (Adult Longfin Smelt Entrainment Protection) was off-ramped after COA 8.3.1 was triggered, and 8.4.1 is inactive with the detection of Longfin Smelt (LFS) larvae.

Proposed Action

OMR Management Measures	Requirement	Time Frame	Trigger	Triggered?
Integrated Early Winter Pulse Protection (“First Flush” Turbidity Event)	Reduce exports for 14 consecutive days so that the 14-day averaged OMR index for the period shall not be more negative than -2,000 cfs	Dec 1 to Jan 31	(1) Running three-day average of daily flows at Freeport >25,000 cfs; and (2) Running three-day average of daily turbidity at Freeport ≥50 Nephelometric Turbidity Units (NTU <sup>1</sup> ); or (3) Real-time monitoring indicates a high risk of migration and dispersal into areas at high risk of future entrainment or a spent delta smelt (DS) has been collected in monitoring surveys.	Triggered 12/18/21
OMR Management	Manage to a more positive OMR than -5,000 cfs	From the onset of OMR management to the end		Not active
Turbidity Bridge Avoidance (“South Delta Turbidity”)	If the daily average turbidity at Bacon Island cannot be maintained less than 12 NTU, manage exports to achieve an OMR no more negative than -2,000 cfs until the daily average turbidity at Bacon Island drops below 12 NTU.	After the first flush or Feb 1 (whichever comes first) and until a ripe or spent female is detected or April 1 (whichever is first)	Average daily turbidity in Old River at Bacon Island (OBI) at a level of more than 12 NTU.	Not active
Larval and Juvenile Delta Smelt	Run hydrodynamic models and forecasts of entrainment, informed by the EDSM or other relevant survey data to estimate the percentage of larval and juvenile delta smelt that could be entrained. If necessary, manage exports to limit entrainment to be protective based on the modeled recruitment levels.	On or after March 15 of each year until off-ramp criteria are met	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 year life stages	Not active

<sup>1</sup> The current instrumentation measures turbidity in Formazin Nephelometric Units (FNU).

<b>OMR Management Measures</b>	<b>Requirement</b>	<b>Time Frame</b>	<b>Trigger</b>	<b>Triggered?</b>
End of OMR Management	OMR criteria may control operations until June 30 (for Delta Smelt and Chinook salmon), until June 15 (for steelhead/rainbow trout), or when the species-specific off ramps have occurred, whichever is earlier.	During OMR management to June 30, or when the DS temperature off ramp has been reached.	DS: when the daily mean water temperature at Clifton Court Forebay reaches 77°F for 3 consecutive days	Not active

### TTP Conditions of Approval

<b>Condition of Approval</b>	<b>Requirement</b>	<b>Time Frame</b>	<b>Trigger</b>	<b>Triggered?</b>
8.1.5.2 (Smelt Monitoring Team Risk Assessment)  Triggered	Outlines contents for weekly risk assessments of Delta Smelt and Longfin Smelt (LFS) required under 8.1.5 and 8.1.1	Nov 1 <sup>st</sup> through June 30 <sup>th</sup> or until off-ramped by 8.8		Yes
8.3.1 (Integrated Early Winter Pulse Protection)	Reduce south Delta exports for 14 consecutive days to maintain a 14-day average OMR index no more negative than -2,000 cfs, and convene the Smelt Monitoring Team within one day of triggering. After maintaining a 14-day average OMR index no more negative than -2,000 cfs for 14 days, Permittee shall maintain a 14-day average OMR index no more negative than -5,000 cfs, initiating the OMR Management season.	Dec 1 to Jan 31	Three-day running average daily flows at Freeport greater than, or equal to, 25,000 cfs, AND Three-day running average of daily turbidity at Freeport is greater than, or equal to, 50 FNU OR The Smelt Monitoring Team determines that real-time monitoring of abiotic and biotic factors indicates a high risk of DS migration and dispersal into areas at high risk of future entrainment.	Triggered 12/18/21

Condition of Approval	Requirement	Time Frame	Trigger	Triggered?
8.3.3 (Adult Longfin Smelt Entrainment Protection)	After December 1, if an Integrated Early Winter 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 -5,000 cfs and initiate OMR Management if: Cumulative expanded salvage, Dec 1 <sup>st</sup> through Feb 28 <sup>th</sup> , exceeds most recent FMWT Index divided by 10, or SMT determines that there is a high risk of entrainment.	Dec 1 through Feb 28 <sup>th</sup>	Salvage threshold for WY 2022 is one.	Off-ramped due to trigger of 8.3.1
8.4.1 (OMR Management for Adult Longfin Smelt)	The SMT shall conduct weekly risk assessments and decide whether to recommend and OMR flow requirement to minimize entrainment 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 -4,000 cfs to -5,000 cfs Medium risk: OMR between -2,500 cfs to -4,000 cfs High risk: OMR between -1,250 cfs to -2,500 cfs	Onset of OMR management through Feb 28 <sup>th</sup>	SMT recommendation based on weekly risk assessment	Off-ramped by larval detections in SLS 12

Condition of Approval	Requirement	Time Frame	Trigger	Triggered?
8.4.2 (Larval and Juvenile Longfin Smelt Entrainment Protection)	If triggered, it will restrict south Delta exports for seven consecutive days in order to maintain a seven-day average OMR index no more negative than -5,000 cfs and convene the SMT to recommend an OMR flow limit between -1,250 and -5,000 cfs.	January 1st through June 30th or until the temperature offramp occurs	(1) Longfin Smelt larvae or juveniles are found in four or more of the 12 Smelt Larval Survey (SLS) or 20 mm stations in the central or south Delta, Or (2) Longfin Smelt catch per tow exceeds five larvae or juveniles in two or more of the 12 stations in the central or south Delta. The relevant stations are: 809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918 and 919	Not active
8.4.3 High flow offramp for Longfin Smelt	If triggered, Conditions of Approval 8.4.1 and 8.4.2 are not required or would cease if previously required.	Throughout OMR management	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 8.4.1 and 8.4.2 shall resume.	Not active
8.5.1 Turbidity Bridge Avoidance	maintain daily average turbidity in Old River at Bacon Island (OBI) at a level of less than 12 NTU. If the daily average turbidity at OBI is greater than 12 NTU, Permittee shall restrict south Delta exports to achieve an OMR flow that is no more negative than -2,000 cfs until the daily average turbidity at OBI is less than 12 NTU.	After the first flush or Feb 1 until end of OMR management or until CDFW is in agreement that the action may be ended or modified.	Turbidity at OBI > 12 FNU	Not active

Condition of Approval	Requirement	Time Frame	Trigger	Triggered?
8.5.2 (Larval and Juvenile Delta Smelt Protection)	If triggered, this Condition of Approval will restrict south Delta exports for seven consecutive days in order to maintain a seven-day average OMR index no more negative than -5,000 cfs and SMT members will meet to assess the risk of entrainment. The SMT may provide further advice to restrict exports in order to maintain an OMR index more positive than -5,000 cfs. In their assessment, SMT members will determine if risk of entrainment is low, medium, or high; subsequent OMR restrictions will be based on level of risk. Furthermore, if salvage of Delta Smelt exceeds 11 in three days, this Condition of Approval will restrict south Delta exports for seven consecutive days in order to maintain a seven-day average OMR index no more negative than -3,500 cfs.	Nov 1 <sup>st</sup> through June 30 <sup>th</sup> or until off-ramped by 8.8	When the five-day salvage of juvenile Delta Smelt is greater than or equal to one plus the average prior three years' FMWT index (rounded down). The 2021 FMWT index for Delta Smelt zero.	Active, not triggered
8.8 (End of OMR Management)	If triggered, OMR Management would be off-ramped for Longfin and Delta Smelt.	From the onset of OMR management through June 30 <sup>th</sup>	Daily mean water temperature at Clifton Court Forebay is >25° C for three consecutive days.	Not active
8.12 (Barker Slough Pumping Plant Longfin and Delta Smelt Protection)	Barker Slough Pumping Plant will reduce exports so the maximum 7-day average is <60 cfs.	From January 15 through March 31 in dry and critical water years for Longfin Smelt, and from March 1 <sup>st</sup> through June 30 <sup>th</sup> for Delta Smelt	Larval Smelt are detected at SLS Station 716 during the period identified for each species, and/or when recommended by the SMT	Not active

## Current Operations & Outlook

USBR and DWR shared operations updates from the Outlook. Their observations included:

- USBR Central Valley Office reported that releases from Whiskeytown Dam on Clear Creek are currently 200 cfs. No modifications expected.
- Releases on the Sacramento River from Keswick Dam are currently 3,250 cfs. No modifications expected.
- American River releases from Nimbus Dam are holding at 550 cfs. Forecasted precipitation could modify flows.
- Releases from Goodwin Dam on the Stanislaus River are currently 200 cfs. Forecasted precipitation could modify flows.
- As of December 20<sup>th</sup>, Delta CVP exports were 900 cfs, but a change order targeting 1,700 cfs has been issued for Friday due to forecasted precipitation.
- DWR reported that Feather River releases are currently at 950 cfs.
- Freeport flows were 21,000 cfs on Monday, and expected to increase to 35,000 cfs later this week with forecasted precipitation.
- San Joaquin River flows at Vernalis were 1,000 cfs.
- Clifton Court Forebay exports increased last week to 5,500 cfs on December 19<sup>th</sup>. As of the 20<sup>th</sup>, exports are 1,200 cfs to target the -2,000 cfs OMR Index requirement which is in place through January 2<sup>nd</sup>, 2022. Exports will decrease to 400 to 500 cfs on Friday due to USBR's planned pumping action.
- Delta outflows as of December 19<sup>th</sup> were slightly below 36,000 cfs and decreased to 24,000 cfs by the 20<sup>th</sup>. Depending on forecasted precipitation flows could reach 40,000 cfs by next week.
- X2 is just downstream of Collinsville, and will likely move further west due to the pulse from the next storm.
- QWEST was near 6,000 cfs last week due to rain effects, but dipped to -2,700 cfs on the 19<sup>th</sup>. QWEST will likely increase to 3,000 to 4,000 cfs in the coming week given decreased exports and anticipated precipitation.
- Rio Vista flows are above 20,000 cfs.
- Operations are targeting an average OMR Index of -2,000 cfs until January 2<sup>nd</sup>, 2022.
- DWR clarified that the end of the -2,000 cfs first flush pumping action is January 2<sup>nd</sup>, 2022 and as of January 3<sup>rd</sup>, 2022 the target will be -5,000 cfs.
- There were no updates to the survey status table.

## Review of Environmental Conditions and Survey Updates

- CDFW reported that SLS started the week of December 13<sup>th</sup>. All stations were sampled. Processing is underway and 20 LFS have been detected so far. All stations in the central and south Delta have been processed.
  - Four LFS from station 809 on the lower San Joaquin River (one had a yolk sac present).
  - One LFS larva from station 812.
  - 10 LFS from the Sacramento River, five of which had a yolk sac.
  - Six LFS from stations 804, 801, 519, and 520 in the confluence region. Four of six had a yolk sac present.
- Bay Study released a catch update from December noting 106 juvenile and 13 adult LFS.
  - One adult and one juvenile LFS were detected in the Sacramento River.
  - 20 juvenile and 3 adult LFS were detected in Suisun Bay.

- The remaining LFS were detected in San Pablo and other sections of the Bay.
- SLS 13 will be in the field starting Monday December 27<sup>th</sup> and should conclude by the 30<sup>th</sup>.
- CDFW clarified that the Larval Entrainment Pilot Study (LEPS) will begin when SLS detects LFS at stations 914, 915, and 916 due to their proximity to the region LEPS investigates. Furthermore, the Principal Investigator can initiate LEPS sooner. Currently, LEPS is set to begin on January 10<sup>th</sup>, coinciding with SLS survey 1. CDFW is currently discussing starting LEPS on January 3<sup>rd</sup> instead.

USFWS provided updates on the Enhanced Delta Smelt Monitoring (EDSM) program and Chipps Island Trawl.

- EDSM detected 8 DS during the week of the 13<sup>th</sup>.
  - Six experimental release DS in the lower Sacramento River near the release site.
  - Two unmarked (i.e., presumed wild) fish.
- Both unmarked fish were sent to the Fish Conservation and Culture Laboratory (FCCL) for genetic testing to confirm origin.
- One dead upon capture experimental DS was found on December 21<sup>st</sup> in the Sacramento Deep Water Shipping Channel (SDWSC). *See post-meeting update below.*
- USFWS will sample the lower Sacramento River December 22<sup>nd</sup> and 23<sup>rd</sup>.
- EDSM detected 12 LFS between 64 and 84 mm during the week of the 13<sup>th</sup>.
  - Nine in Suisun Marsh
  - Three in Suisun Bay
- Chipps Island Trawl caught 16 LFS the week of December 13<sup>th</sup>. Seven of the 16 were larger than 80 mm and transferred to FCCL and not checked for expression. No expression of eggs or milt were detected in the fish smaller than 80 mm.

*After the meeting, USFWS shared the following update regarding the DS detected in the SDWSC today:*

*It seems highly possible that this was a leftover fish from the previous site. This hypothesis is based on the fact that:*

- (1) the previous site was relatively close to the experimental release area,*
- (2) the Delta Smelt was dead when found,*
- (3) secchi disk depth at the supposed capture site was 1.38m (clearer water than where we would expect to catch DS), and*
- (4) in four tows at the supposed capture site only one other fish was captured.*

*Standard EDSM procedure includes flushing out the net after the last tow at each site to prevent this type of situation, and any fish found after flushing are recorded as a "Code 9". The previous site had seven Code 9 fish, so if this Delta Smelt is from that site it is unclear why it wasn't flushed out with the other fish.*

CDFW provided a salvage update (December 14<sup>th</sup> to 20<sup>th</sup>).

- No smelt salvaged at either facility.

USBR shared environmental data updates as of December 20<sup>th</sup>.

- Three-station daily average water temperature: 9.05° C.
- Three-day running average discharge at Freeport: 24,294 cfs.
- Three-day running average turbidity at Freeport: 64.34 FNU.
- Daily average turbidity at OBI: 3.13 FNU.
- X2 is <81 km.



- Weather forecast out of Antioch is cloudy with east to southeast winds from 5 to 10 mph. Precipitation accumulating from a tenth to quarter of an inch is possible.
- Weather forecast out of Stockton is cloudy with southeast winds from 5 to 16 mph. Precipitation accumulating from a tenth to quarter of an inch is possible.

## PART 2: Open Discussion on Species Status (Structured-Unstructured Time)

- USBR requested input from the SMT on how to describe the likelihood of entrainment given precautionary measures taken.
  - CDFW noted that the three main points of interest relative to assessing DS entrainment are first flush conditions, turbidity in south and central Delta, and the DS found in the SDWSC.
  - DWR highlighted the robustness of turbidity data given instrumentation redundancy at OBI which will support the Turbidity Bridge Avoidance action. Furthermore, DWR requested feedback from the SMT on any additional data needs.
    - The SMT agreed that at this point there is no need for additional data collection such as a transect to measure turbidity.
    - CDFW and USFWS both collect turbidity data as part of their regular surveys and can share this data with the SMT if needed.
  - CDFW reviewed Bay Delta Live turbidity data with the SMT.
    - The south and central Delta displayed low levels of turbidity most likely due to low flow from the San Joaquin River and an OMR Index no more negative than -2,000cfs.
    - Lower levels of turbidity tend to coincide with dryer years.
- The SMT discussed the latest DS detections:
  - USBR reiterated that notifications will continue to be circulated to the SMT as future releases of experimental DS occur.
  - USFWS clarified, at CDFW's request, that EDSM's take starts counting towards the Interagency Ecological Program's (IEP's) programmatic take of 10 DS starting in 2022.
  - DWR, USBR, and CDFW recommended exercising caution when interpreting recent unmarked DS detections as the fish may be unidentified experimental releases, and a conclusion will only be reached after genetic testing.
  - CDFW pointed out that there was high turbidity between the experimental release site and the location of the dead upon capture DS in the Sacramento Deep Water Shipping Channel which would fit the conceptual model that DS migrate towards more turbid waters. Alternatively, tidal surfing could also facilitate movement up the SDWSC.
  - CDFW noted that the San Joaquin River, and Three Mile Slough in particular, have increasing turbidity which might attract experimentally released DS. Increased surveys in the area could help inform the status of DS presence and act as an early warning for management measures.
    - USFWS brought up existing EDSM sampling in the south Delta and San Joaquin stratum that survey for LFS/DS two days a week in each strata with three sites per strata each day.
- CDFW reported that LFS collected by the Fall Midwater Trawl in the Sacramento Deep Water Shipping Channel were misidentified. The fish are actually Wakasagi. CDFW will reflect this update in their documentation.
  - DWR asked if genetic testing of these fish was still necessary.
  - CDFW confirmed that genetic testing is no longer needed.

## PART 3: Live-edit Assessments

### ITP Longfin Smelt Risk Assessment

The SMT reviewed and discussed updates to the ITP Risk Assessment.

- CDFW updated the life stages for LFS adding larvae and replacing juvenile with subadult as the later will make it easier to distinguish between this year and last year's cohort.
- Section 1-A
  - Routing risk remains Moderate for LFS due to risk of movement into the central Delta for adult and subadults. Furthermore, spawning migration has begun and dry year conditions elevate risk of movement into the lower San Joaquin River.
  - Routing Risk for DS is low due to turbidity in the lower San Joaquin River.
  - Exposure risk for LFS was updated to reflect that the -2,000 cfs pumping action maintains low risk for larvae due to reduced exports.
  - Overall entrainment risk for LFS is low due to:
    - Reduced exports targeting an OMR Index no more negative than -2,000 cfs reducing risk of entrainment for larvae.
    - Lack of detections of adults and subadults in the lower San Joaquin River and south Delta.
- Section 1-B
  - Exposure risk for LFS was reduced to low due to the low risk for adult and subadult if present in the lower San Joaquin River and south Delta. However, no LFS have been detected in that region.
  - Change in exposure for LFS was decreased due to reduced exports.
- DWR clarified that the PTM runs will take into account the presence of the emergency drought barrier.
- Summary
  - The Summary was updated to reflect recent OMR pumping actions' impacts on lowering risk of larval and older LFS entrainment.
  - New language was added to note that LFS adults are present in the Delta and there is evidence that spawning has commenced based on SLS detections.
- Advice to WOMT
  - No advice beyond notification of COA 8.3.1 being triggered.

### Proposed Action Weekly Evaluation of Delta Smelt, including Distribution, Abiotic Conditions, Risk Assessment Questions, and Executive Summary

USBR reviewed proposed changes to the PA assessment.

- The latest abundance estimate was added to the Population Status section, along with language clarifying that the abundance estimate is generated from unmarked fish only and does not take tagged fish into account.
- Biological Conditions now reflect DS presence in the lower Sacramento River and that DS migration is expected in response to increased turbidity and first flush conditions.
- Descriptions of recent DS detections were clarified to note the size of two DS below the 58 mm adult threshold (54 and 55 mm).
- A new section was added to capture updates related to the cultured DS experimental releases, including:
  - Verbatim language pulled from the release notification.
  - An additional table to note stratum and quantity caught.

- Forecasted distribution was updated to acknowledge how experimentally released DS will influence population distribution and stating that the SMT cannot predict distribution beyond the original release site and subsequent recaptures.
- Abiotic conditions were updated to capture changing turbidity and note possible increases in turbidity given coming storms.
- The relevant evaluation questions were updated to reflect the latest dates and data and to recognize initiation of the Integrated Early Winter Pulse Protection and forthcoming Turbidity Bridge Avoidance actions.
- Language referring to the relationship between X2 position and the centroid of DS distribution was removed throughout the assessment and outlook as this relationship is no longer relevant now that first flush conditions were met.

#### Part 4: Additional Considerations/Discussion

USBR updated the outlook to reflect updates shared during this meeting:

- Deleted misidentified Sacramento Deep Water Shipping Channel LFS detections.
- Noted that COA 8.3.3 is off-ramped.

Agencies reported no items for elevation to WOMT.

## Smelt Monitoring Team – Monday, December 20<sup>th</sup>, 2021

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### PARTICIPANTS

- California Department of Fish and Wildlife (CDFW)
- California Department of Water Resources (DWR)
- State Water Resources Control Board (SWRCB)
- U.S. Bureau of Reclamation (USBR)
- U.S. Fish and Wildlife Service (USFWS)
- Kearns & West (KW)

### PURPOSE

Convene the SMT to address the triggering of COA 8.3.1 (Integrated Early Winter Pulse Protection) as of December 18<sup>th</sup>, 2021.

### MEETING SUMMARY

CDFW reviewed the current status of actions and triggers from the ITP:

- CDFW reported that the 3-day average Freeport turbidity and flows have exceeded the thresholds outlined in the ITP COA and triggered OMR Management Measure 8.3.1. The language in the ITP outlines that south Delta exports shall be reduced for 14 consecutive days to maintain an OMR Index running average no more negative than -2,000 cfs, and the SMT shall convene within one day of triggering the above criteria.

- Condition 8.4.1 shall remain inactive due to recent larval LFS detections, and 8.4.2 will not be initiated until January 1<sup>st</sup>, 2022. With 8.3.3 off-ramping as 8.3.1 initiates, there are no current adult LFS protections.
- DS actions include 8.5.1 (Turbidity Bridge Avoidance) which will become active after the 14-day south Delta export reduction concludes. COA 8.12 (Barker Slough) activates January 15<sup>th</sup>, 2022 if the water year type is dry or critical.

USBR reviewed the current status of actions and triggers from the PA:

- First flush was triggered, and the 14-day pumping action is active.
- The next step is the Turbidity Bridge Avoidance action which will remain in effect until February 1<sup>st</sup> and until a ripe or spent female is detected or April 1<sup>st</sup>. Per the PA language USBR and DWR propose to manage exports in order to maintain daily average turbidity in Old River at Bacon Island (OBI) at a level of less than 12 NTU. If the daily average turbidity at OBI is greater than 12 NTU, Permittee shall restrict south Delta exports to achieve an OMR flow that is no more negative than -2,000 cfs until the daily average turbidity at OBI is less than 12 NTU.

DWR updated the SMT on water operations and environmental conditions:

- Three-day average flow at Freeport was 27,285 cfs.
- Turbidity at Freeport was 66.8 FNU.
- The OMR Index is currently -1,900 cfs.
- Small export increases are possible (mirroring Vernalis flows) starting Friday or Saturday to maintain a -2,000 OMR Index
- The E/I ratio was near 65% over the weekend.
- Over the weekend, combined exports were near 9,600 cfs with and OMR Index slightly more positive than -9,000 cfs.
- Freeport was near 2,500 cfs on December 19<sup>th</sup> and will trend downward until next set of winter storms.
- Delta outflows are within the 25,000 cfs range and will trend downward until next set of winter storms.
- Water quality in the Delta is declining as flows increase.
- X2 slightly upstream of the confluence.
- December 18<sup>th</sup> QWEST flows were 4,500 cfs due to rain effect and trended negative to -2,700 cfs on the 19<sup>th</sup>. Next week, QWEST will range from 4,000 cfs to 1,000 cfs given export modifications and winter storm rain effect.