



Weekly Fish and Water Operations Outlook

2/14/2023 – 2/20/2023

Water Project Operational Intent for Week

- Combined CVP/SWP exports scheduled so that the 14-day average OMR is less negative or equal to -5,000 cfs.

Biological Justification

- Daily average turbidity at OBI is less than 12 FNU, so no operational modifications under the Federal Biological Opinions and/or State Incidental Take Statement are currently in effect except for the -5,000 cfs OMR limit for the OMR Management Season.

Forecasted Weather

- A very weak system at start of week brings breezy northern winds and very light mountain precipitation through Tuesday. Dry and cooler weather from mid to late week, with a slow warming trend.

Tables

Table 1: Anticipated weekly operational ranges by tributary. Environmental and fish conditions updated by respective watershed groups at varying intervals that may not coincide with the weekly range of Water Operations.

Tributary/Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Clear Creek	<ul style="list-style-type: none"> • Current Release: 200 cfs. • Anticipated Weekly Range of Releases: 200 cfs. 	<ul style="list-style-type: none"> • Spring-run Chinook Salmon juveniles are rearing/emigrating. • Fall-run Chinook Salmon fry and juveniles are rearing/emigrating. • Late fall-run Chinook Salmon are spawning, and eggs are incubating in the gravel. • <i>O. mykiss</i> adults are spawning, and eggs are incubating in the gravel. <p><i>(Updated 2/14/2023)</i></p>

Tributary/Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Sacramento River	<ul style="list-style-type: none"> • Shasta Storage: 2.647 MAF • Current Release: 3,250 cfs • Anticipated Weekly Range of Releases: 3,250 cfs. 	<ul style="list-style-type: none"> • Spring-run Chinook salmon fry have completed final redd emergence and are rearing or migrating downstream. • Winter-run Chinook juvenile salmon are migrating downstream. Winter-run and spring-run Chinook salmon (length-at-date) juveniles are being caught in low numbers and genetics being taken to confirm run assignment. • Fall-run Chinook salmon spawning is complete. Carcass surveys for fall-run have ended. Fall-run juveniles from October spawners have emerged, Nov-Dec spawner juveniles remain in the gravel for up to another few weeks. • Late fall-run Chinook salmon are spawning and eggs in gravel. Carcass surveys are underway. Late-fall spawning can occur up to late March but majority of spawning will be complete by the end of January. • Fall-run juveniles, according to length-at-date-criteria, are being caught in decreasing numbers at the RBDD rotary traps. <p><i>(Updated 2/13/23)</i></p>
Feather River	<ul style="list-style-type: none"> • Oroville Storage: 2.414 MAF • Current Release: 950 cfs • Anticipated Weekly Range of Releases: 950 cfs • Daily temperature maximum: 55 F at Fish Hatchery 	<ul style="list-style-type: none"> • Fall-run Chinook salmon fry are emerging and are rearing/moving downstream. • Spring-run Chinook salmon fry are emerging and are rearing/moving downstream. • <i>O. mykiss</i> Adult spawning is coming to an end, eggs are in gravel and incubating. <p><i>(Updated 2/14/2023)</i></p>
American River	<ul style="list-style-type: none"> • Folsom Storage: 516 TAF • Current Release: 4,000 cfs • Anticipated Weekly Range of Releases: 3,000 cfs to 4,000 cfs 	<ul style="list-style-type: none"> • Adult fall-run Chinook Salmon have completed spawning. Eggs are incubating in gravel and fry are emerging from redds. • Redd and carcass surveys have ended. • Juvenile and adult <i>O. mykiss</i> are present. Adult steelhead are spawning in river. <p><i>(Updated 1/30/23)</i></p>
Stanislaus River	<ul style="list-style-type: none"> • New Melones Storage: 1.039 MAF • Current Release: 200 cfs • Anticipated Range of Weekly Releases: 200 cfs. 	<ul style="list-style-type: none"> • Juvenile and adult <i>O. mykiss</i> are present. • Adult fall-run Chinook salmon spawning has ended. Eggs are incubating in gravel. Fry are emerging from redds and beginning to migrate downstream. <p><i>(Updated 2/13/23)</i></p>

Tributary/Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Delta	<ul style="list-style-type: none"> Freeport: 15,000 to 22,000 cfs Vernalis: 3,500 to 4,500 cfs Delta Outflow index: 15,000 to 20,000 cfs Combined Exports: 6,300 to 7,700 cfs JPP: Current 4,200 cfs, Range 3,500 cfs – 4,200 cfs CCF: Current 3,500 cfs Range 2,800 cfs to 3,500 cfs Expected Daily OMR Index Values: - 4,800 to -5,000 cfs DCC Gates: Closed as of 11/28 and expected to remain closed for seasonal operation. 	<ul style="list-style-type: none"> Adult <i>O. mykiss</i> present. Spring-run and winter-run Chinook salmon juveniles are moving downstream and into the Delta. Adult and juvenile Green Sturgeon present Adult Delta Smelt migration has likely ended. EDSM caught an unmarked adult DS in the lower San Joaquin River on 1/31/23 and in the South Delta on 1/17/23. EDSM and SKT caught five marked DS in the lower Sacramento River, Liberty Island, and Suisun Marsh during the week of 2/6/23. Marked Delta Smelt were salvaged at the SWP and CVP, for a season expanded total of 20. Experimental releases are complete with the most recent having been in the Sac DWSC 1/25-26/23. Last week, Longfin Smelt sub-adults and adults were detected at Chipps, the Western Delta, and Suisun Marsh and Suisun Bay. Spawning is ongoing and LFS larvae have most recently been detected in the lower San Joaquin River, confluence, Suisun Bay, and downstream to San Pablo Bay. Four adult LFS have been salvaged at the CVP and 1 adult LFS at SWP this WY for an expanded total of 20. <p><i>(Updated 2/14/2023)</i></p>

Table 2a-b: WY 2023 relevant Fish and Environmental Criteria and Status in 2019 Reclamation LTO Action Cumulative loss for the duration of 2019 Biological Opinion began upon signature of ROD, 2/19/2020.

Table 2a: WY 2023 Salmonid Current Loss and Delta Smelt Abiotic Conditions. Additional Real-Time OMR Restrictions and Performance Objectives (4.10.5.10.2, 4.10.5.10.3) and Onset of OMR Management (4.10.5.10.1). Genetic identification of salmon is not used in calculating loss, but results are included in the Assessment as they become available.

*The Final WR JPE for BY2022 is 49,924.

Species/run	Threshold	Current Status	Weekly Trend	Updated
Green sturgeon	WY 2023 salvage = 74	WY 2023 salvage = 0 (0%)	No change expected	2/13/2023
Natural winter-run Chinook Salmon	WY 2023 loss = 292 (50% of 1.17% of JPE)	WY 2023 loss = 50.91 (17.4%)	Possible salvage	2/13/2023
Natural Steelhead	Dec 1 – Mar 31 = 707 (50% of 1,414) Apr 1 – June 15 = 776 (50% of 1,552)	WY 2023 loss = 120.2 Dec 1 – Mar 31 = 120.2 (17.00%) Apr 1 – June 15 = 0 (0%)	Possible salvage	2/13/2023

Species/run	Threshold	Current Status	Weekly Trend	Updated
Sacramento River Hatchery winter-run Chinook salmon	WY 2023 loss = 114.6 (50% of 0.12% of JPE)	WY 2023 loss = 0 (0%)	Possible salvage	2/13/2023
Battle Creek Hatchery winter-run Chinook salmon	WY 2023 loss = 40 (1% of JPE)	WY 2023 loss = 0 (0%)	No change expected	2/13/2023
Proposed Action Hatchery yearling spring-run Chinook salmon surrogates	> 0.5% of each release group 1) 12/5/2022 group 1: 71,057 = 355.3 2) 12/23/2022 group 2: 66,735 = 333.7 3) 1/13/2023 group 3: 60,712 = 303.6	WY 2023 loss = 1) 127.5 (35.9%) 2) 141.3 (42.3%) 3) 8.6 (2.83%)	Possible salvage	2/13/2023
Delta Smelt	After Dec. 1: Running 3-day avg. flows at Freeport >25,000 cfs Running 3-day avg. turbidity at Freeport =>50 FNU	Freeport 3-day avg. Flow = Not relevant Turbidity = Not relevant	Triggered 12/31/22, ended 01/16/23	1/23/2023 Data from 1/22/2023
Delta Smelt	Daily avg. Turbidity at OBI=>12 FNU	OBI Daily Average = 9.86 NTU/FNU	In effect, not triggered; implemented 1/17/2023-2/8/2023; ripe females detected by SKT	2/13/2023
Delta Smelt	Daily avg. Temperature at CCF > 25°C for three consecutive days	CCF daily avg. Temperature = Not relevant	Not relevant	12/20/2022

Table 2b. 10-Year Salmonid Cumulative Loss

Species/run	Threshold	Current Status	Updated
Natural winter-run Chinook salmon	Loss = 8,738	Cumulative loss = 309.76 (3.5%)	2/13/2023
Hatchery winter-run Chinook salmon	Loss = 5,356	Cumulative loss = 6.71 (0.13%)	2/13/2023
Natural steelhead	Loss = 6,038 (Dec 1 – Mar 31) Loss = 5,826 (Apr 1 – June 15)	Cumulative loss = 661.53 (11.0%, Dec 1 – Mar 31) 474.5 (8.1%, Apr 1 – June 15)	2/13/2023

Table 3a-d: Relevant Water Year 2023 Fish Criteria and Status for Listed Fish under the SWP Long-Term Incidental Take Permit.

Table 3a: Chinook Salmon

* Based on NMFS letter received on 1/20/2023, Final WR JPE for BY2022 is 49,924.

** Based on the lab results received (up to sample date 1/17/23), there was no natural WR identified through genetic verification process

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
OMR Mgmt. triggered (8.3.2)	Jan. 1 - Jun. 30 <i>(when ≥ 5% of spring-run or winter-run in Delta)</i>	Not in effect	-5% of the Winter-run or Spring-run population in Delta	N/A	N/A	12/18/22	N/A
Winter-run yearly loss (8.6.1)	Nov. 1 - Jun. 30	In effect	584.11 (based on final JPE)*	WR loss: 50.19**	Possible salvage	2/14/23	Based on salvage data from 1/29/23
Winter-run discrete daily loss (8.6.2)	Nov. 1 - Dec. 31	Not in effect	12/1-12/31: loss of 26/day unclipped older juv. Winter-run	Daily loss from 12/18 unclipped WR salvage: 17.54 fish/TAF < 26 fish/TAF	Possible salvage	1/3/23	Based on salvage data from 12/18/22
Mid and late season Winter-run daily loss threshold (8.6.3)	Jan 1 – May 31	In effect	2/1/23 -2/28/23 Daily loss of older juvenile greater than 4.95; Updated with genetic results as they become available. If genetics confirms the older juvenile is NOT a WR then COA will offramp.	N/A	Possible salvage	2/14/23	Based on salvage data from 2/13/22
Spring-run surrogate protection (8.6.4)	Feb. 1 - Jun. 30	In effect	TBD (based on the number of fish released*)	N/A	N/A	2/14/23	*Releases have not occurred yet for COA 8.6.4.

Table 3b: Delta Smelt

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
Integrated Early Winter Pulse Protection ('First Flush') (8.3.1)	Dec. 1 - Jan. 31	Off-ramped 1/17/2023	- three-day Freeport daily flow running avg >= 25,000 AND [three-day Freeport turbidity running avg >=50 NTU OR Smelt Monitoring Team recommendation]	FPT flow: Not relevant FPT turbidity: Not relevant	Decreasing	1/30/23	N/A
Turbidity Bridge Avoidance (8.5.1)	Dec. 15 - Apr. 1	In effect, not triggered; implemented 1/17/2023-2/8/2023	Occurs after the Integrated Early Winter Pulse protection or February 1 (whichever comes first) until April 1 -avg. OBI turbidity > 12 FNU	OBI = 9.86 FNU	Decreasing	2/13/23	Data from 2/12/23
Larval and/Juvenile Delta smelt Protection (8.5.2)	ongoing	In effect, not triggered	- If 5-day cum. salvage of juv.DS >= 1 [average 3-yr FMWT index + 1], then -5000 OMR - If DS in SLS/20mm or 3-d temp at Jersey Point >= 12C, and SLS/20mm Secchi for 12 south delta stations <= 1m, then -3500 OMR	Current 5-day salvage = 0 3-day SJJ temp = 9.89 SLS 3 avg Secchi = 47 cm	No change expected	2/14/23	Data from 2/12/23

Table 3c: Longfin Smelt

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
Early Adult Protection (8.3.3)	Dec. 1 - Feb. 28	Off-ramped	-Cum. salvage > [most recent FMWT/10] =40 fish (Sept.-Dec. Index) OR -Smelt Monitoring Team determines high likelihood of LFS movement into high-risk areas	Cum salvage total = 20	No change expected	2/13/23	First salvage on 1/1/23.
OMR Mgt. for Adults (8.4.1)	Dec. 1 -Feb. 28	Off-ramped	-Smelt Monitoring Team recommendation	N/A	N/A	12/27/22	N/A
Larval and Juvenile Longfin Smelt Entrainment Protection (8.4.2)	Jan 1 – Jun 30	In effect, not triggered	-LFS larvae or juveniles in >=4 SLS or 20 mm stations in central and south Delta, OR -LFS catch/tow >5 larvae or juveniles in >=2stations	SLS #3: 2 larvae at station 809 and 2 at 812 in central and south Delta	None expected	2/13/23	SLS 3 was in the field 1/30- 2/3
High Flow OMR Off-Ramp for Longfin Smelt (8.4.3)	Based on the status of 8.3.3, 8.4.1, & 8.4.2	In effect, not triggered	-Sac. R. at Rio Vista>55,000, OR SJR at Vernalis >8,000	Rio Vista = 15,000 – 20,000 cfs SJ = 3,500 to 4,500 cfs	N/A	2/14/23	N/A

Table 3d: OMR

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
OMR Storm Flexibility (8.7)	Jan 1 – Jun 30	Not in Effect	-Delta is in excess -QWEST is > 0 -Measurable amount of precipitation has occurred -None of COA's are controlling operations (8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.6.2, 8.6.3, 8.6.4) -Cumulative salvage at CVP and SWP of yearling CNFH LFR Chinook salmon (as yearling CHNSR surrogates) is < 0.5% with any of the release groups -Risk Assessments conducted by the SaMT/SMT determines no changes in spawning, rearing, foraging, sheltering, or migration behavior as a result of OMR Flex operations beyond those are likely to occur.	N/A	N/A	1/3/23	Based on storm conditions
OMR Mgmt. Offramp (8.8)	Jun. 1 – Jun. 30	Not in effect	->95% of the Winter-run and Spring run populations have migrated past Chipps Island AND -Current daily average water temperature at Mossdale and Prisoners Point. <ul style="list-style-type: none"> Days exceeded: Criteria met as of 6/16/2022 	N/A	N/A	10/10/22	N/A

Table 4: Fish monitoring gear efficiency and disruptions. Status Categories: [1] Active (ongoing sampling), [2] Partial Interruption (some sampling interruptions), [3] Interrupted (sampling fully suspended), [4] Not Active (sampling not scheduled)

Monitoring survey	Region	Notes (as of 2/14/2023)	Status
SWP regular counts, CWT reading	Delta	Active	1
SWP larval sampling	Delta	Not Active	4

Monitoring survey	Region	Notes (as of 2/14/2023)	Status
CVP regular counts, CWT reading	Delta	Partial Interruption	2
CVP larval sampling	Delta	Not Active	4
Smelt Larval Survey	Delta	Active	1
LEPS	Delta	Active	1
20mm Survey	Delta	Not Active	4
Spring Kodiak Trawl	Delta	Active	1
Fall Mid-water Trawl	Delta	Not Active	4
Summer Townet Survey	Delta	Not Active	4
Bay Study	Delta	Active	1
DJFMP- Chipps and Sacramento Trawls	Delta	Active (sampling three days a week starting in May)	1
DJFMP- Seines	Delta	Active	1
EDSM	Delta	Active	1
EMP	Delta	Active	1
Mossdale	Delta	Active	1
USGS Flow monitoring	Delta	Active	1
Red Bluff Diversion Dam Rotary Screw Trap (RST)	Sacramento River	Active	1
Knights Landing RST	Sacramento River	Active	1
Tisdale RST	Sacramento River	Active	1
GCID RST	Sacramento River	Not Active (Traps pulled out of river due to high flows on 12/27)	4
Yuba River (Hallwood) RST	Yuba River	Active – weekdays only	1
Redd dewatering and stranding surveys	Sacramento River	Not Active	4
Sacramento Carcass and Redd Surveys	Sacramento River	Active	1
Lower Sacramento RST	Sacramento River	Active (inactive on 2/8)	1
Feather River (upper DWR) RST	Feather River	Active	1
Feather River (lower CDFW) RST	Feather River	Active	1
SJRRP CDFW Field Monitoring	San Joaquin River	Active	1
SJRRP USFWS and USBR Field Monitoring	San Joaquin River	Not Active	4
Stanislaus Fish Weir	Stanislaus River	Active	1
American River Carcass/Redd Surveys	American River	Not Active	4

Monitoring survey	Region	Notes (as of 2/14/2023)	Status
Caswell RST	Stanislaus River	Active	1