BUREAU OF RECLAMATION

Weekly Fish and Water Operations Outlook

3/12/2024 – 3/18/2024

Water Project Operational Intent for Week

- Effective March: X2 at Port Chicago for 27 days in March; E/I <= 0.35.
- Effective 2/7, CVP and SWP project operations will be limited to a 7-day average OMRI flow no more negative than -3,500 cfs per the 2023 IOP/ITP COA 8.5.2.
- Effective 3/8, CVP and SWP project operations will be limited to a 14-day average OMRI flow no more negative than -2,500 cfs per the Proposed Action and ITP COA 8.6.1 with 75% of the annual loss threshold of natural-origin LAD winter-run exceeded on 3/7.
- Effective 2/29, CVP and SWP project operations will be limited to a 14-day average OMRI flow no more negative than –2,500 cfs to continue evaluating steelhead conditions and risks per WOMT decision of 2/28.
- Effective 3/11, CVP and SWP project operations will be limited to an OMRI of no more negative than –500 cfs beginning Monday 3/11, to protect steelhead based on the Proposed Action: Director's decision of 3/7.

Forecasted Weather

- Periods of breezy wind, light rain and mountain snow to start the week. A dry weather pattern arrives by mid-week with a warming trend for late week and the weekend.

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	• Current Release: 200 cfs • Anticipated Weekly Range of Releases: 200 cfs	• Spring-run and fall run Chinook salmon juveniles are rearing and beginning to outmigrate. • Late fall-run Chinook Salmon eggs are incubating. • Adult O. mykiss are spawning. Their eggs are incubating, and juveniles are rearing. (*Updated 3/12/2024*)
Sacramento River	• Shasta Storage: 3.852 MAF • Current Release: 15,000 cfs • Anticipated Weekly Range of Releases: 6,000 cfs to 15,000 cfs	• Late fall-run Chinook adults are continuing their spawning but are past the peak period. • Late-fall run Chinook eggs/alevins are currently incubating/residing in the gravel, with some early fry likely emerging from the gravel. • Fall-run redds are mostly emerged. Fry are actively migrating downstream. • Spring run adults are moving upstream in the Sac and into various tributaries where they will spend the summer before spawning in Sep-Oct. • Adult winter-run are arriving in the upper river and holding. *(Updated 3/12/2024)*

Tributary/Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Feather River	• Oroville Storage: 2.980 MAF • Current Release: 10,000 cfs • Anticipated Weekly Range of Releases: 8,000 cfs to 10,000 cfs.	• Fall-run Chinook salmon fry are emerging and migrating downstream. • O. mykiss adult spawning is complete, eggs are incubating in gravel, fry are beginning to emerge and juveniles are rearing. • Majority of adult green sturgeon are still holding in the LFC near Fish Barrier Dam, a few have moved downstream. • Spring-run Chinook salmon juveniles are rearing and migrating downstream. (*Updated 3/12/2024*)
American River	• Folsom Storage: 646 TAF • Current Release: 6,000 cfs • Anticipated Weekly Range of Releases: 3,000 cfs to 6,000 cfs for flood management	• *O. mykiss* juveniles are rearing. • Adult fall-run Chinook salmon spawning has ended. • Eggs are incubating in gravel. • Fry are beginning to emerge and migrate downstream. • *O. mykiss* Adults are present. (*Updated 1/30/2024*)
Stanislaus River	• New Melones Storage: 2.006 MAF • Current Release: 1,500 cfs • Anticipated Weekly Range of Releases: 1,500 cfs for flood management	• O. mykiss Adult and juveniles are present. • Fall-run Chinook salmon spawning has ended. • Eggs are incubating in gravel. Fry are beginning to emerge and migrate downstream. (*Updated 1/29/2024*)

Tributary/Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Delta	• Freeport: 40,000 to 60,000 cfs • Vernalis: 4,000 to 7,000 cfs • Delta Outflow index: 40,000 to 70,000 cfs • Combined Exports: 2,200 to 3,600 cfs • JPP: Current 2,700 cfs, Range 1,800 cfs to 2,700 cfs • CCF: Current 900 cfs, Range 400 cfs to 1,500 cfs • Expected Daily OMR Index Values: -400 cfs to • -600 cfs • DCC Gates: Closed on 11/27 for season • X2 < 56 km • Tides: Transitioning from Spring to Neap; First Quarter Moon on 3/16	• Juvenile and adult O. mykiss present. • Juvenile Chinook Salmon present. • Adult winter-run Chinook Salmon are present. • Adult and juvenile Green Sturgeon are present. • Adult spring-run Chinook Salmon are present. • Delta Smelt adults have been detected in Suisun Marsh, the lower San Joaquin River, and the Deep Water Shipping Channel since 2/27. DS population scale migration is likely completed, and water temperatures are suitable for spawning. • Longfin Smelt sub-adults and adults have been detected in South San Francisco Bay, San Pablo Bay, Carquinez Strait, Suisun Marsh and Bay, Honker and Grizzly bays, Chipps Island, and the Lower San Joaquin River. Longfin Smelt larvae have been detected in the Napa River, Carquinez Strait, San Pablo Bay, Suisun Bay and Marsh, the Confluence, lower Sacramento and San Joaquin rivers, and the Central and South Delta. The centroid of distribution for all life-stages appears to be west of the Confluence. LFS spawning is ongoing. *(Updated 3/11/2024)*

Table 2a-b: WY 2024 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 2024 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 BY 2023 is 234,896. The ITL and performance thresholds are TBD.

Species/run	Threshold	Current Status	Weekly Trend	Updated
Green sturgeon	WY 2024 salvage = 74	WY 2024 salvage = 0 (0%)	No change expected	3/11/2024
Natural winter-run Chinook Salmon	WY 2024 loss = 2748 (100% of 1.17% of JPE)	WY 2024 loss = 2294.21 (83.5%) 75% threshold exceeded 3/7/2024 50% threshold exceeded 2/25/2024	Increasing	3/11/2024
Natural Steelhead	Dec 1 – Mar 31 = 1414; (100% of 1,414) Incidental Take =2,760 Apr 1 – June 15 = 776 (50% of 1,552)	WY 2024 loss = 2,594 Dec 1 – Mar 31 = 2,594 (94%) 100% threshold loss exceeded on 2/23/24 75% threshold exceeded 2/22/24 50% threshold exceeded 2/11/2024 Apr 1 – June 15 = 0 (0% of the 50% threshold)	Increasing	3/11/2024
Sacramento River Hatchery winter-run Chinook salmon	WY 2024 loss = 140.93 (50% of 0.12% of JPE)	WY 2024 loss = 0 (0%)	Increasing	3/11/2024
Battle Creek Hatchery winter-run Chinook salmon	WY 2024 loss = 234.90 (1% of JPE)	WY 2024 loss = 0 (0%)	No change expected	3/11/2024
Proposed Action Hatchery yearling spring-run Chinook salmon surrogates	> 0.5% of each release group 1) 12/22/2023 group 1: 60,764 = 303.82 2) 12/29/2023 group 2: 71,049 = 355.25 3) 1/11/2024 group 3: 67,018 = 335.09	WY 2024 loss = 1) 36.84 (12.12%) 2) 31.75 (8.94%) 3) 75.69 (22.6%)	No change; may increase	3/11/2024

Species/run	Threshold	Current Status	Weekly Trend	Updated
Delta Smelt	After Dec. 1: Running 3-day avg. flows at Freeport >25,000 cfs AND Running 3-day avg. turbidity at Freeport =>50 FNU	Offramped. Implemented 1/23/2024-2/5/2024. Flow = N/A; Turbidity = N/A	Not relevant	2/12/2024
Delta Smelt	Daily avg. Turbidity at OBI=>12 FNU	In effect. Not triggered. OBI Daily Average = 5.4 FNU	Remaining stable or decreasing	3/11/2024
Delta Smelt	Daily avg. Temperature at CCF > 25°C for three consecutive days	In effect. Not triggered. CCF (CLC CDEC station) daily avg. Temperature = N/A	Not relevant	3/11/2024

Table 2b. 10-Year Salmonid Cumulative Loss

Species/run	Threshold	Current Status	Updated
Natural winter-run Chinook salmon	Loss = 8,738	Cumulative loss = 2664.46 (30.5%)	3/11/2024
Hatchery winter-run Chinook salmon	Loss = 5,356	Cumulative loss = 6.71 (0.13%)	3/11/2024
Natural steelhead	Loss = 6,038 (Dec 1 – Mar 31) Loss = 5,826 (Apr 1 – June 15)	Cumulative loss = 4170.46 (69.1%, Dec 1 – Mar 31) 1012.50 (17.4%, Apr 1 – June 15)	3/11/2024

Table 3a-d: Relevant Water Year 2024 Fish Criteria and Status for Listed Fish under the SWP Long-Term Incidental Take Permit.

Table 3a: Chinook Salmon

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 *(when ≥ 5% of spring-run or winter- run in Delta)*	In effect	≥ 5% of the Winter-run or Spring-run population in Delta	N/A	N/A	2/26/2024	In effect as of January 1.
Winter-run yearly loss (8.6.1)	Nov. 1 - Jun. 30	In effect	2,748.28 (1.17% of Natural LAD WR of Final JPE) 232.30 (0.12% of LSNFH WR of Final JPE)	Loss of total LAD Winter-run = 2296.81 (83.57% of Natural LAD WR threshold)	Salvage is likely to occur in the upcoming week	3/11/24	Natural-origin LAD winter-run Chinook salmon (WR) were observed in salvage the previous week.
Winter-run discrete daily loss (8.6.2)	Nov. 1 - Dec. 31	Not in effect	26 older juvenile/day	Max Older Juvenile discrete daily loss observed last week = N/A	N/A	1/22/2024	N/A

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
Mid and late season Winter-run daily loss threshold (8.6.3)	Jan 1 – May 31	In effect	3/1-3/31: loss of 8.74 fish /day of natural-origin LAD older juvenile (Winter-run, Yearling fall-run, and Late fall-run). Updated with genetic results as they become available. If genetics confirms that the older juvenile is NOT a WR then that fish will not count towards the threshold.	Max daily Loss of older juvenile Chinook occurred on 3/5 with loss of 157.80	Salvage of older juveniles is likely in the upcoming week.	3/11/2024	17 genetically confirmed WR were observed in salvage for the season.
Spring-run surrogate protection (8.6.4)	Feb. 1 - Jun. 30	In effect	Feather River Hatchery CWT (Group 1) loss threshhold: 1,749.71 (0.25% of 699,883)	N/A	N/A	3/12/24	On March 14, 699,883 BY 2023 spring-run will be released at the Gridley and Boud's Pump Boat Launch facilities by DFW. This group is 100% CWT marked and clipped.

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	- three-day Freeport daily flow running avg>= 25,000 AND [three-day Freeport turbidity running avg >=50 FNU OR Smelt Monitoring Team recommendation]	Not relevant	Not relevant	2/12/24	N/A
Turbidity Bridge Avoidance (8.5.1)	Dec. 15 - Apr. 1	In effect; not triggered	Occurs after the Integrated Early Winter Pulse protection or February 1 whichever comes first until April 1 -avg. OBI turbidity>12 FNU	OBI daily average = 5.4 FNU	Remaining stable or decreasing	3/11/24	N/A

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
Larval and/Juvenile Delta smelt Protection (8.5.2)	Nov. 1 – Jun. 30	Triggered 2/5/2024, 2/21/2024, and 3/4/2024	- 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= 12.5 °C Average Secchi Depth = 95 cm (as of 3/4)	Remaining stable or increasing	3/11/24	N/A

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] = 46 fish (Sept.-Dec. Index) OR -Smelt Monitoring Team determines high likelihood of LFS movement into high-risk areas	Cumulative salvage = 0	N/A	12/26/23	N/A

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
OMR Mgt. for Adults (8.4.1)	Onset of OMR mgmt -Feb. 28	Off-ramped	-Smelt Monitoring Team recommendation	N/A	N/A	12/19/23	N/A
Larval and Juvenile Longfin Smelt Entrainment Protection (8.4.2)	Jan 1 – Jun 30	Not triggered by SLS 5	-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 5 detected no larvae in the South and Central Delta.	N/A	3/12/24	N/A
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	Triggered 2/6/2024	-Sac. R. at Rio Vista>55,000, OR SJR at Vernalis >8,000	Rio Vista = 35,000 – 55,000 – cfs SJ = 4,000 – 7,000 cfs	Flows are decreasing	3/11/24	Off-ramps 8.4.2 until Sac flows at Rio Vista <40,000 cfs and SJR <5,000 cfs

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 3/12/2024)	Status
SWP regular counts, CWT reading	Delta	Active	1
SWP larval sampling	Delta	Active	1
CVP regular counts, CWT reading	Delta	Active	1

Monitoring survey	Region	Notes (as of 3/12/2024)	Status
CVP larval sampling	Delta	Active	1
Smelt Larval Survey	Delta	Active	1
LEPS	Delta	Active	1
20mm Survey	Delta	Not Active (will begin on 3/18)	4
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	1
DJFMP- Seines	Delta	Active	1
EDSM	Delta	Active	1
Environmental Monitoring Program (EMP)	Delta	Active	1
Mossdale Trawl	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
Yuba River (Hallwood) RST	Yuba River	Active	1
Redd dewatering and stranding surveys	Sacramento River	Active	1
Sacramento Carcass and Redd Surveys (Late fall-run Chinook salmon)	Sacramento River	Active	1
Lower Sacramento RST	Sacramento River	Active	1
Feather River (upper DWR) RST	Feather River	Active	1
Feather River (lower CDFW) RST	Feather River	Active	1
Lower American River at Watt Ave RST	American River	Active	1
SJRRP CDFW Field Monitoring	San Joaquin River	Active	1
SJRRP USBR Field Monitoring	San Joaquin River	Active	1
Stanislaus Fish Weir	Stanislaus River	Active	1

Monitoring survey	Region	Notes (as of 3/12/2024)	Status
American River Carcass/Redd Surveys (Fall-run Chinook salmon)	American River	Not Active	4
Stanislaus Carcass Survey (Steelhead)	Stanislaus River	Active	1
Caswell RST	Stanislaus River	Active	1
Wallace Weir	Cache Slough	Active	1
Butte Creek RST/Diversion Trap	Butte Creek	Active	1