BUREAU OF RECLAMATION

Weekly Fish and Water Operations Outlook 1/30/2024 – 2/5/2024

Water Project Operational Intent for Week

- Implementation of the "Integrated Early Winter Pulse Protection" action began 1/23. The Projects will coordinate their combined exports for 14 consecutive days so that the 14-day averaged OMRI for the period shall not be more negative than –2,000 cfs through 2/5.

Forecasted Weather

- The week begins warm and dry. By mid-week, an active weather pattern will bring cooler temperatures, gusty winds, precipitation and mountain snow to the Central Valley region. For the weekend, a clearing (wet to dry) trend develops, with cooler temperatures remaining in place.

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 Chinook salmon fry rearing. • Fall-run Chinook salmon eggs are incubating and hatching. Juveniles are emerging and rearing. • Late fall-run Chinook Salmon adults are spawning and eggs are incubating. • Adult *O. mykiss* are migrating and spawning. Their eggs are incubating and juveniles are rearing. (*Updated 1/22/2024*)

Sacramento River	• Shasta Storage: 3.591 MAF • Current Release: 5,000 cfs • Anticipated Weekly Range of Releases: 5,000 cfs to 40,000 cfs for flood management.	• Adult fall-run Chinook salmon spawning is complete. Late fall-run Chinook adults are approaching peak spawning and some are still holding. • Fall-run redds are in various stages. Some eggs are still incubating, while others have emerged. Fry are beginning to migrate downstream. • Late-fall run Chinook eggs are currently incubating in gravel. *(Updated 1/29/2024)*
Feather River	• Oroville Storage: 2.691 MAF • Current Release: 1,750 cfs • Anticipated Weekly Range of Releases: 1,750 cfs to 15,000 cfs.	• Fall-run Chinook salmon adult spawning has ended. Redds are being observed in both the HFC and LFC. Eggs are incubating in gravel. Fry are beginning to emerge and migrate downstream. • *O. mykiss* juveniles are rearing. Adults are migrating upstream. • Adult green sturgeon are still holding in the LFC. • Spring-run Chinook salmon adults have completed spawning. Eggs are incubating in gravel. Fry are emerging and migrating downstream. (*Updated 1/22/2024*)
American River	• Folsom Storage: 529 TAF • Current Release: 1,750 cfs • Anticipated Weekly Range of Releases: 1,750 cfs to 3,000 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 present (*Updated 1/30/2024*)
Stanislaus River	• New Melones Storage: 1.984 MAF • Current Release: 1,500 cfs • Anticipated Weekly Range of Releases: 1,500 cfs for flood management	• *O. mykiss* - Adult and juveniles 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*)
Delta	• Freeport: 30,000 to 75,000 cfs • Vernalis: 2,500 to 6,000 cfs • Delta Outflow index: 35,000 to 80,000 cfs • Combined Exports: 3,500 to 5,200 cfs • JPP: Current 1,800 cfs, Range 1,800 cfs to 3,600 cfs • CCF: Current 2,000 cfs, Range 800 cfs to 2,500 cfs • Expected Daily OMR Index Values: -1,800 cfs to -2,200 cfs • DCC Gates: Closed on 11/27 for season • X2 is approx. 61 km • Tides: Transitioning from Spring to Neap tide, last quarter moon 2/2	• Juvenile and adult *O. mykiss* present • Juvenile Chinook Salmon present • Adult and juvenile Green Sturgeon present • Delta Smelt sub-adults and adults (size-based) have been detected in the lower Sacramento River, Deep Water Shipping Channel, Suisun Marsh, and the South Delta. DS population scale migration is ongoing. • Longfin Smelt sub-adults and adults have been detected in Suisun Marsh and Bay, Grizzly Bay, San Pablo Bay, Chipps Island, and at the Confluence and Lower Sacramento River. Longfin Smelt larvae have been detected in the Lower San Joaquin River, Suisun Marsh, the Confluence, Central and South Delta, and the Lower Sacramento River. LFS population scale migration and spawning are ongoing.

		(*Updated 1/29/2024*)

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	1/29/2024
Natural winter-run Chinook Salmon	WY 2024 loss = 1374 (50% of 1.17% of JPE)	WY 2024 loss = 64.47 (4.7%)	Increasing	1/29/2024
Natural Steelhead	Dec 1 – Mar 31 = 707; (50% of 1,414) Apr 1 – June 15 = 776 (50% of 1,552)	WY 2024 loss = 89.29 Dec 1 – Mar 31 = 89.29 (12.6 % of the 50% threshold) Apr 1 – June 15 = 0 (0% of the 50% threshold)	Increasing	1/29/2024
Sacramento River Hatchery winter-run Chinook salmon	WY 2024 loss = 140.93 (50% of 0.12% of JPE)	WY 2024 loss = 0 (0%)	Increasing	1/29/2024
Battle Creek Hatchery winter-run Chinook salmon	WY 2024 loss = 234.90 (1% of JPE)	WY 2024 loss = 0 (0%)	No change expected	1/29/2024
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) 24.53 (8.1%) 2) 10.01 (2.8%) 3) 24.28 (7.2%)	Increasing	1/29/2024

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	Triggered 1/21/2024 with Freeport 3-day avg. Flow = 44210 cfs; Turbidity = 57.8 FNU	Increase this week	1/29/2024 (data from 1/28/2024)
Delta Smelt	Daily avg. Turbidity at OBI=>12 FNU	OBI Daily Average = 3.51 FNU		1/29/2024
Delta Smelt	Daily avg. Temperature at CCF > 25°C for three consecutive days	CCF daily avg. Temperature = Not relevant	Not relevant	11/27/2023

Table 2b. 10-Year Salmonid Cumulative Loss

Species/run	Threshold	Current Status	Updated
Natural winter-run Chinook salmon	Loss = 8,738	Cumulative loss = 434.72 (4.98%)	1/29/2024
Hatchery winter-run Chinook salmon	Loss = 5,356	Cumulative loss = 6.71 (0.13%)	1/29/2024
Natural steelhead	Loss = 6,038 (Dec 1 – Mar 31) Loss = 5,826 (Apr 1 – June 15)	Cumulative loss = 1665.75 (27.6%, Dec 1 – Mar 31) 1012.50(17.4%, Apr 1 – June 15)	1/29/2024

Table 3a: 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	1/298/2024	In effect as of January 1.

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
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 = 64.47	Salvage is likely to occur in the upcoming week	1/29/24	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
Mid and late season Winter-run daily loss threshold (8.6.3)	Jan 1 – May 31	**In effect**	1/1-1/31: loss of 2.91 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. Upcoming loss value: 2/1-2/29: loss of 5.43 fish /day of natural-origin LAD older juvenile (Winter-run, Yearling fall-run, and Late fall-run).	Max daily Loss of older juvenile Chinook occurred on 1/26 and 1/28 with loss of 9.57.	Salvage of older juveniles is likely in the upcoming week.	1/29/2024	Trigger was exceeded on 1/22, 1/25, 1/26, 1/27, and 1/28 based on LAD Older Juvenile loss threshold. Only 1 genetically confirmed WR was observed in salvage on 1/16/24 which triggered COA 8.6.3.
Spring-run surrogate protection (8.6.4)	Feb. 1 - Jun. 30	Not in effect	TBD	N/A	N/A	9/29/23	Will be updated when in effect

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	Triggered	- three-day Freeport daily flow running avg>= 25,000 AND [three-day Freeport turbidity running avg >=50 FNU OR Smelt Monitoring Team recommendation]	Triggered on 1/21/2024 with Freeport 3-day avg. Flow = 44210 cfs; Turbidity = 57.8 FNU	Flows expected to increase this week	1/29/24	N/A
Turbidity Bridge Avoidance (8.5.1)	Dec. 15 - Apr. 1	Not in effect	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 = 3.51 FNU		1/29/24	N/A
Larval and/Juvenile Delta smelt Protection (8.5.2)	Nov. 1 – Jun. 30	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= 11.44 °C Average Secchi Depth = 118cm (as of 1/22)	N/A	1/29/24	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
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	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 2 detected 24 larvae at stations 809, 812, 815, 901 and 902 on 1/22/24.	N/A	1/23/24	SWP is restricted to an OMRI of –5,000 on a 7-day average.
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 = 20,000 – 65,000 – cfs SJ = 2,500 – 6,000 cfs	N/A	1/29/24	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 1/30/2024)**	**Status**
SWP regular counts, CWT reading	Delta	Active	1
SWP larval sampling	Delta	Not Active	4
CVP regular counts, CWT reading	Delta	Active	1
CVP larval sampling	Delta	Not Active	4
Smelt Larval Survey	Delta	Active	1
LEPS	Delta	Active	1

Monitoring survey	Region	Notes (as of 1/30/2024)	Status
20mm Survey	Delta	Not Active	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	Partially Interrupted (Inactive due to high flows from 1/21/24-1/29/24)	2
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
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