BUREAU OF RECLAMATION

Weekly Fish and Water Operations Outlook 11/28/2023 – 12/04/2023

Water Project Operational Intent for Week

- Monthly Delta Outflow and Rio Vista flow for November and December greater than 4,500 cfs; E/I ratio not to exceed 0.65.

Forecasted Weather

- Dry conditions expected this week with mild days and cool nights; slight precipitation chances in the mountains on Thursday; highest chances for precipitation in the northern Sacramento Valley are this weekend (40% to 65%).

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	• Fall-run Chinook salmon spawning is ongoing, eggs are incubating in gravel • Spring-run Chinook salmon eggs are incubating in the gravel. • Adult *O. mykiss* migrating and juveniles are rearing (*Updated 11/13/2023*)
Sacramento River	• Shasta Storage: 3.085 MAF • Current Release: 5,000 cfs • Anticipated Weekly Range of Releases: 5,000 cfs.	• Adult fall-run Chinook salmon are finishing migrating into tributaries, and spawning. • Late-fall run Chinook adults are moving upstream and holding • Winter-run fry are migrating downstream past RBDD

		• At RBDD, length-at-date and genetic spring-run fry are being captured • *O. mykiss* juveniles are rearing. • Adult green sturgeon are holding. • Green sturgeon juveniles are rearing. *(Updated 11/20/2023)*
Feather River	• Oroville Storage: 2.335 MAF • Current Release: 1,750 cfs • Anticipated Weekly Range of Releases: 1,750 cfs.	• Fall-run Chinook salmon adult spawning has begun. Redds are being observed in both the HFC and LFC. • *O. mykiss* juveniles are rearing. Adults are migrating upstream. • Adult green sturgeon are still holding in the Low Flow Channel. • Spring-run Chinook salmon adults have likely completed spawning. Eggs are incubating in gravel. (*Updated 11/27/2023*)
American River	• Folsom Storage: 491 TAF • Current Release: 2,000 cfs • Anticipated Weekly Range of Releases: 2,000 cfs	• *O. mykiss* juveniles are rearing. • Adult fall-run Chinook salmon are migrating upstream and have begun spawning. (*Updated 11/7/2023*)
Stanislaus River	• New Melones Storage: 1.930 MAF • Current Release: 200 cfs • Anticipated Weekly Range of Releases: 200 cfs	• *O. mykiss* - Adult and juveniles present • Fall-run Chinook salmon adults are migrating upstream and actively spawning. (*Updated 11/20/2023*)
Delta	• Freeport: 8,000 to 9,000 cfs • Vernalis: 1,000 to 1,500 cfs • Delta Outflow index: 4,000 to 5,000 cfs • Combined Exports: 3,300 to 7,200 cfs • JPP: Current 1,800 cfs, Range 1,800 cfs to 2,700 cfs • CCF: Current 3,000 cfs, Range 1,500 cfs to 4,500 cfs • Expected Daily OMR Index Values: -3,000 cfs to -5,000 cfs • DCC Gates: Closed on 11/27 • X2 is greater than 81 km • Tides: Transitioning from Spring to Neap tide; Last Quarter moon on 12/4	• Adult *O. mykiss* present • Adult and juvenile Green Sturgeon present • Delta Smelt sub-adults and adults (size-based) are present in the lower Sacramento River. • Longfin Smelt sub-adults and adults have been detected in Suisun Marsh and Bay, Grizzly Bay, San Pablo Bay, and at Chipps Island. Sub-adult LFS have also been detected at the Confluence and Lower Sacramento River. (*Updated 11/27/2023*)

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. * TBD – no draft JPE produced, ITL and performance thresholds are TBD currently

Species/run	Threshold	Current Status	Weekly Trend	Updated
Green sturgeon	WY 2024 salvage = 74	WY 2024 salvage = 0 (0%)	No change expected	11/27/2023
Natural winter-run Chinook Salmon	WY 2024 loss = TBD* (50% of 1.17% of JPE)	WY 2024 loss = 0 (0%)	No change expected	11/27/2023
Natural Steelhead	Dec 1 – Mar 31 = 707; (50% of 1,414) Apr 1 – June 15 = 776 (50% of 1,552)	WY 2024 loss = 0.68 Dec 1 – Mar 31 = 0.68 (0.096 % of the 50% threshold) Apr 1 – June 15 = 0(0% of the 50% threshold)	No change expected	11/27/2023
Sacramento River Hatchery winter-run Chinook salmon	WY 2024 loss = TBD* (50% of 0.12% of JPE)	WY 2024 loss = 0 (0%)	No change expected	11/27/2023
Battle Creek Hatchery winter-run Chinook salmon	WY 2024 loss = TBD* (1% of JPE)	WY 2024 loss = 0 (0%)	No change expected	11/27/2023
Proposed Action Hatchery yearling spring-run Chinook salmon surrogates	> 0.5% of each release group	WY 2024 loss = 0 (0%)	No change expected	11/27/2023
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 = 8447.81 cfs; Turbidity = 3.19 FNU	No change expected	11/27/2023
Delta Smelt	Daily avg. Turbidity at OBI=>12 FNU	OBI Daily Average = Not relevant	Not relevant	11/27/2023
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 = 368.95 (4.2%)	11/27/2023
Hatchery winter-run Chinook salmon	Loss = 5,356	Cumulative loss = 6.71 (0.13%)	11/27/2023
Natural steelhead	Loss = 6,038 (Dec 1 – Mar 31) Loss = 5,826 (Apr 1 – June 15)	Cumulative loss = 1576.53 (26.1%, Dec 1 – Mar 31) 976.75(16.8%, Apr 1 – June 15)	11/27/2023

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)*	Not in effect	5% of the Winter-run or Spring-run population in Delta	N/A	N/A	9/29/23	Will be updated when in effect.
Winter-run yearly loss (8.6.1)	Nov. 1 - Jun. 30	In effect	TBD (based on WY 2023 JPE)	N/A	N/A	11/27/23	
Winter-run discrete daily loss (8.6.2)	Nov. 1 - Dec. 31	In effect	11/1-11/30: loss of 6/day unclipped older juv. Winter-run 12/1-12/31: loss of 26/day unclipped older juv. Winter-run	Max WR discrete daily loss observed last week = 0	N/A	11/27/23	Unclipped WR have not been yet salvaged at SWP/CVP since the season started.
Mid and late season Winter-run daily loss threshold (8.6.3)	Jan 1 – May 31	Not In effect	TBD	N/A	N/A	9/29/23	Will be updated when in effect.
Spring-run surrogate protection (8.6.4)	Feb. 1 - Jun. 30	Not in effect	TBD		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	Not in effect	- three-day Freeport daily flow running avg>= 25,000 AND	Freeport 3-day avg. Flow = 8447.81 cfs; Turbidity = 3.19 FNU	No change expected	11/27/23	N/A

			[three-day Freeport turbidity running avg >=50 FNU OR Smelt Monitoring Team recommendation]				
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 until April 1) comes first -avg. OBI turbidity>12 FNU	N/A	N/A	11/27/23	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-yrFMWT 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= 13.42 °C	N/A	11/27/23	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	Not in effect	-Cum. salvage > [most recent FMWT/10] =1 fish (Sept.-Oct. Index) OR -Smelt Monitoring Team determines high likelihood of LFS movement into high-risk areas	N/A	N/A	11/27/23	N/A

OMR Mgt. for Adults (8.4.1)	Dec. 1 -Feb. 28	Not in effect	-Smelt Monitoring Team recommendation	N/A	N/A	11/27/23	N/A
Larval and Juvenile Longfin Smelt Entrainment Protection (8.4.2)	Jan 1 – Jun 30	Not in effect	-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	N/A	N/A	11/27/23	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	In effect, not triggered	-Sac. R. at Rio Vista>55,000, OR SJR at Vernalis >8,000	Rio Vista = 5,000 – 6,500 cfs SJ = 1,000 – 1,500 cfs	N/A	11/27/23	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 11/20/2023)**	**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	Not Active	4
LEPS	Delta	Not Active	4
20mm Survey	Delta	Not Active	4
Fall Mid-water Trawl	Delta	Active	1
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
EMP	Delta	Active	1

Monitoring survey	Region	Notes (as of 11/20/2023)	Status
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	4
Yuba River (Hallwood) RST	Yuba River	Active	1
Redd dewatering and stranding surveys	Sacramento River	Active	1
Sacramento Carcass and Redd Surveys	Sacramento River	Active	1
Lower Sacramento RST	Sacramento River	Active	1
Feather River (upper DWR) RST	Feather River	Not Active	4
Feather River (lower CDFW) RST	Feather 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	American River	Active	1
Caswell RST	Stanislaus River	Not Active	4
Wallace Weir	Cache Slough	Active	1
Butte Creek RST/Diversion Trap	Butte Creek	Active	1