BUREAU OF RECLAMATION

Weekly Fish and Water Operations Outlook

1/24/2023 – 1/30/2023

Forecasted Weather: Dry conditions this week, with sunny days and cool overnight temperatures. Gusty north to east winds over the next few days. Possible pattern change next week, with cooler daytime temperatures likely.

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 are emerging from redds and are rearing/emigrating. • Fall-run Chinook Salmon eggs are incubating in the gravel, and fry are emerging from redds and are rearing/emigrating. Late fall-run Chinook Salmon are entering and beginning to spawn. Eggs are incubating in the gravel. • O. mykiss adults are entering and are beginning to spawn. Eggs are incubating in the gravel. *(Updated 1/9/2023)*

Tributary/Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Sacramento River	• Shasta Storage: 2.479 MAF • Current Release: 3,450 cfs • Anticipated Weekly Range of Releases: 3,250 to 3,450 cfs. Flows are currently being reduced to 3,250 cfs.	• 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 are underway. Eggs are incubating in gravel and fry are beginning to emerge from redds • Late fall-run Chinook salmon are spawning and eggs in gravel. 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 at increasing numbers at the RBDD rotary traps. *(Updated 1/23/23)*
Feather River	• Oroville Storage: 2.176 MAF • Current Release: 950 cfs • Anticipated Weekly Range of Releases: 950 cfs • Daily temperature maximum: 55 F at Fish Hatchery	• Fall-run Chinook salmon eggs are incubating in gravel and fry are beginning to emerge and move downstream. • Spring-run Chinook salmon fry are emerging and juveniles are moving downstream. • Adult and juvenile O. mykiss present. *(Updated 1/24/2023)*
American River	• Folsom Storage: 527 TAF • Current Release: 7,000 cfs • Anticipated Weekly Range of Releases: 7,000 cfs to 4,000 cfs	• Adult fall-run Chinook Salmon have completed spawning. Eggs are incubating in gravel and fry are beginning to emerge from redds. Redd and carcass surveys have ended. Juvenile and adult O. mykiss are present. (*Updated 1/10/23*)
Stanislaus River	• New Melones Storage: 947 TAF • Current Release: 400 cfs • Anticipated Range of Weekly Releases: 200 cfs to 400 cfs.	• Juvenile and adult O. mykiss are present. • Adult fall-run Chinook salmon spawning has ended. Eggs are incubating in gravel. Fry should begin emerging from redds beginning mid-January. *(Updated 1/23/23)*

Tributary/Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Delta	• Freeport: 30,000 to 60,000 cfs • Vernalis: 13,000 to 20,000 cfs • Delta Outflow index: 40,000 to 80,000 cfs • Combined Exports: 9,500 to 13,700 cfs • JPP: 3,500 cfs to 4,200 cfs • CCF: 6,000 cfs to 9,500 cfs • Expected Daily OMR Index Values: -3,000 to -5,000 cfs • DCC Gates: Closed as of 11/28 and expected to remain closed for seasonal operation.	• Adult O. mykiss 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 are migrating. DJFMP Chipps Island trawl caught an experimentally released adult Delta Smelt on 1/19/23. EDSM caught an unmarked adult Delta Smelt in the South Delta on 1/17/23. The salvage of a cultured DS adult at CVP occurred on 1/7/23. Experimental release of hatchery Delta Smelt at Rio Vista occurred on 11/30/22 and 1/18-19/23. • Longfin Smelt sub-adults and adults have recently been detected in the lower San Joaquin River, Chipps, the lower Sacramento River, the Western Delta, and Suisun Marsh and Suisun Bay. Spawning is ongoing and LFS larvae have most recently been detected in the confluence, Suisun Bay, and downstream to San Pablo Bay. Three adult LFS have been salvaged at the CVP and 1 adult LFS at SWP this WY for an expanded total of 16. (*Updated 1/24/2023)*

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	1/23/2023
Natural winter-run Chinook Salmon	WY 2023 loss = 292 (50% of 1.17% of JPE)	WY 2023 loss = 47.31 (14.3%)	Possible salvage	1/24/2023
Natural Steelhead	Dec 1 – Mar 31 = 707 (50% of 1,414) Apr 1 – June 15 = 776 (50% of 1,552)	WY 2023 loss = 71.50 Dec 1 – Mar 31 = 71.50 (5.1%) Apr 1 – June 15 = 0 (0%)	Possible salvage	1/23/2023

Species/run	Threshold	Current Status	Weekly Trend	Updated
Sacramento River Hatchery winter-run Chinook salmon	WY 2023 loss = TBD* (50% of 0.12% of JPE)	WY 2023 loss = 0 (0%)	No change expected	1/23/2023
Battle Creek Hatchery winter-run Chinook salmon	WY 2023 loss = TBD * (50% of 0.12% of JPE)	WY 2023 loss = 0 (0%)	No change expected	1/23/2023
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 (0.18%) 2) 141.3 (0.21%) 3) 0 (0%)	Possible salvage	1/23/2023
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 = 65,211 cfs Turbidity = 95.0 FNU	Triggered 12/31/22, ended 01/16/23 Flow: remain elevated and dynamic Turbidity: remain elevated	1/23/2023 Data from 1/22/2023
Delta Smelt	Daily avg. Turbidity at OBI=>12 FNU	OBI daily Avg Turbidity = 24.0 FNU	Triggered; Turbidity Bridge Avoidance implemented 1/17/23 – Present Remain elevated	1/23/2023
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 = 306.16 (3.5%)	1/23/2023
Hatchery winter-run Chinook salmon	Loss = 5,356	Cumulative loss = 6.71 (0.13%)	1/23/2023
Natural steelhead	Loss = 6,038 (Dec 1 – Mar 31) Loss = 5,826 (Apr 1 – June 15)	Cumulative loss = 612.63 (10.1%, Dec 1 – Mar 31) 474.5 (8.1%, Apr 1 – June 15)	1/23/2023

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 *(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	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: 47.31**	Possible salvage	1/24/23	Based on salvage data from 1/22/23
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	1/1/23 - 1/31/23 Daily loss of older juvenile greater than 3.17 and updated with genetic results as they become available.	Salvage of older juvenile with loss of 5.33 on 1/17/23	Possible salvage	1/24/23	Based on salvage data from 1/22/23
Spring-run surrogate protection (8.6.4)	Feb. 1 - Jun. 30	Not in effect	TBD (based on the number of fish released)	N/A	N/A	10/31/22	N/A

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: 65,211 cfs FPT turbidity: 95.0 FNU	Dynamic and elevated	1/24/23	Data from 1/22/23
Turbidity Bridge Avoidance (8.5.1)	Dec. 15 - Apr. 1	In effect, triggered; implemented 1/17/2023-Present	Occurs after the Integrated Early Winter Pulse protection or February 1 (whichever comes first) until April 1 -avg. OBI turbidity>12 FNU	OBI = 24.0 FNU	Elevated	1/24/23	Data from 1/22/23
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-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 = 10.74 SLS 2 avg Secchi = 25 cm	No change expected	1/24/23	Data from 1/16/23

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 = 16	No change expected	1/24/23	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 #2: 0 larvae in central and south Delta	None expected	1/24/23	SLS 2 was in the field 1/17- 1/19
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, not controlling	-Sac. R. at Rio Vista>55,000, OR SJR at Vernalis >8,000	Rio Vista = 30,000 – 50,000 cfs SJ = 13,000 to 20,000 cfs	N/A	1/23/23	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. • 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 1/24/2023)	Status
SWP regular counts, CWT reading	Delta	Active	1
SWP larval sampling	Delta	Not Active	4

Monitoring survey	Region	Notes (as of 1/24/2023)	Status
CVP regular counts, CWT reading	Delta	Partial (expected to reduce counts due to high vegetation)	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	Partial	2
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	Partial (inactive on 1/19-1/23)	2
Tisdale RST	Sacramento River	Active (inactive on 1/22 -1/23)	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	Not Active as of 12/29	4
Feather River (upper DWR) RST	Sacramento River	Active	1
Feather River (lower CDFW) RST	Sacramento River	Active (inactive on 1/4-1/10)	2
SJRRP CDFW Field Monitoring	San Joaquin River	Active	1
SJRRP USFWS and USBR Field Monitoring	San Joaquin River	Not Active	4
Stanislaus Fish Weir	San Joaquin River	Active	1