



Weekly Fish and Water Operations Outlook

12/27/2022 – 1/2/2023

FORECASTED WEATHER: Major pattern shift to wet weather beginning Monday evening. Some drying out between storms is likely on Wednesday and Sunday, otherwise wet conditions continue this week and for the start of next week.

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 eggs are incubating and fry are emerging from redds. Fall-run Chinook salmon eggs are incubating in the gravel. • Late fall-run Chinook salmon are entering and will begin spawning soon. • O. mykiss adults are migrating and holding in Clear Creek. Last year's juvenile O. mykiss are present. <p><i>(Updated 12/27/22)</i></p>
Sacramento River	<ul style="list-style-type: none"> • Shasta Storage: 1.442 MAF • Current Release: 3,250 cfs • Anticipated Weekly Range of Releases: 3,250 cfs w/ possibility of increases due to Keswick side-flow management. 	<ul style="list-style-type: none"> • Spring-run Chinook salmon fry are emerging from redds into the river. Final redd emergence will be in late December. • Winter-run Chinook juvenile salmon have all emerged from redds and 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 wrapping up. Carcass surveys for fall-run are underway. Eggs/fry are incubating in gravel. First emergence estimated around mid-Dec. • Late fall-run Chinook salmon are entering and have begun spawning. • Fall-run juveniles, according to length-at-date-criteria, are being caught at increasing numbers at the RBDD rotary traps. <p><i>(Updated 12/27/22)</i></p>

Tributary/Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Feather River	<ul style="list-style-type: none"> • Oroville Storage: 1.059 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 spawning has ended. Eggs are incubating in gravel and fry are beginning to emerge. • Spring-run Chinook salmon fry are emerging and juveniles are moving downstream • Approximately 15-20 green sturgeon present from Sunset Pumps to Boyd's Pump. • Adult and juvenile O. mykiss present. <p><i>(Updated 12/27/22)</i></p>
American River	<ul style="list-style-type: none"> • Folsom Storage: 293 TAF • Current Release: 1,300 cfs • Anticipated Weekly Range of Releases: 1,300 cfs w/ possibility of increases due to Natoma side-flow management 	<ul style="list-style-type: none"> • Adult fall-run Chinook Salmon are present and spawning. Eggs are incubating in gravel. Fry are emerging from eggs. Redd and carcass surveys are underway. • Juvenile and adult O. mykiss are present. <p><i>(Updated 12/27/22)</i></p>
Stanislaus River	<ul style="list-style-type: none"> • New Melones Storage: 625 TAF • Current Release: 200 cfs • Anticipated Range of Weekly Releases: 200 cfs w/ possibility of increases due to Tulloch side-flow management 	<ul style="list-style-type: none"> • Juvenile and adult O. mykiss are present. • Adult fall-run Chinook salmon are present and spawning. Eggs are in the gravel. <p><i>(Updated 11/29/22)</i></p>
Delta	<ul style="list-style-type: none"> • Freeport: 7,000 to 30,000 cfs • Vernalis: 800 to 2,500 cfs • Delta Outflow index: 2,000 to 40,000 cfs • Combined Exports: 1,200 to 8,000 cfs • JPP: 900 cfs to 4,200 cfs • CCF: 300 cfs to 6,680 cfs • Expected Daily OMR Index Values: -2,500 to -7,500 cfs • DCC Gates: Closed as of 11/28 and expected to remain closed for seasonal operation, however, adjustments could be necessary to respond to real-time salinity conditions. 	<ul style="list-style-type: none"> • Adult O. mykiss present. • Young-of-year spring-run and winter-run Chinook salmon juveniles are moving downstream. • Adult and juvenile Green Sturgeon present • Delta Smelt adults were recently detected in the lower Sacramento River in mid-December. Experimental release of hatchery Delta Smelt at Rio Vista occurred 11/30/22. • Longfin Smelt sub-adults and adults have recently been detected in the lower Sacramento River and Chipps, as well as Suisun Marsh and Suisun Bay. Spawning has started and LFS larvae have been detected in the lower Sacramento River, north Delta, confluence, and the lower San Joaquin River. <p><i>(Updated 12/27/22)</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) and Onset of OMR Management (4.10.5.10.1). * TBD – no draft JPE produced, ITL and performance thresholds are TBD currently

Species/run	Threshold	Current Status	Weekly Trend	Updated
Green sturgeon	WY 2023 salvage = 74	WY 2023 salvage = 0 (0%)	No change expected	12/27/2022
Natural winter-run Chinook Salmon	WY 2023 loss = TBD * (50% of 1.17% of JPE)	WY 2023 loss = 17.54	Possible salvage	12/27/2022
Natural Steelhead	Dec 1 – Mar 31 = 707 (50% of 1,414) Apr 1 – June 15 = 776 (50% of 1,552)	WY 2023 loss = 0 Dec 1 – Mar 31 = 0 (0%) Apr 1 – June 15 = 0 (0%)	No change expected	12/27/2022
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	12/27/2022
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	12/27/2022
Proposed Action Hatchery yearling spring-run Chinook salmon surrogates	> 0.5% of each release group	WY 2023 loss = 0 (0%)	No change expected	12/27/2022
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 = 7319 cfs Turbidity = 4.82 FNU	Increase	12/27/2022
Delta Smelt	Daily avg. Turbidity at OBI=>12 FNU	OBI daily Avg Turbidity = Not relevant	Not relevant	12/20/2022
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 = 281.7 (3.2%)	12/27/2022
Hatchery winter-run Chinook salmon	Loss = 5,356	Cumulative loss = 6.71 (0.13%)	12/27/2022

Species/run	Threshold	Current Status	Updated
Natural steelhead	Loss = 6,038 (Dec 1 – Mar 31) Loss = 5,826 (Apr 1 – June 15)	Cumulative loss = 530.2 (8.8%, Dec 1 – Mar 31) 474.5 (8.1%, Apr 1 – June 15)	12/27/2022

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

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	TBD (based on JPE)	WR loss: 17.54	N/A	12/18/22	Based on salvage data from 12/18/22
Winter-run discrete daily loss (8.6.2)	Nov. 1 - Dec. 31	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	12/18/22	Based on salvage data from 12/18/22
Mid and late season Winter-run daily loss threshold (8.6.3)	Jan 1 – May 31	Not in effect	N/A	N/A	N/A	10/31/22	N/A
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	In effect, not triggered	- 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: 7319 cfs FPT turbidity: 4.82 FNU	Increase	12/27/22	Data from 12/26/22
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 NTU	N/A	N/A	12/27/22	N/A
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 = 8.75 SLS 13 avg Secchi = 152 cm	No change expected	12/27/22	N/A

Table 3c: Longfin Smelt

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Update	Comments
Early Adult Protection (8.3.3)	Dec. 1 - Feb. 28	In effect, not triggered	-Cum. salvage > [most recent FMWT/10] =32 fish (Sept.-Nov. Index) OR -Smelt Monitoring Team determines high likelihood of LFS movement into high-risk areas	Cum salvage total = 0	No change expected	12/27/22	N/A
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	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	12/27/22	Will take effect Jan 1
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 to 7,000 cfs SJ = 800 to 1,400 cfs	N/A	12/1/22	N/A

Table 3d: OMR

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
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 12/27/2022)	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	Not Active	4
20mm Survey	Delta	Not Active	4
Spring Kodiak Trawl	Delta	Not Active	4
Fall Mid-water Trawl	Delta	Not Active	4
Summer Towntnet 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 screw trap	Sacramento River	Active	1

Monitoring survey	Region	Notes (as of 12/27/2022)	Status
Knights Landing screw trap	Sacramento River	Partial Interruption (inactive on 12/24-12/26)	2
Tisdale screw trap	Sacramento River	Partial Interruption (inactive on 12/23-12/26)	2
GCID screw trap	Sacramento River	Active	1
Yuba River (Hallwood) screw trap	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 Rotary Screw Trap	Sacramento River	Partial Interruption (inactive on 12/23-12/26)	2
Feather River (upper DWR)	Sacramento River	Active	1
Feather River (lower CDFW)	Sacramento River	Partial Interruption (inactive on 12/23-12/26)	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