Weekly Fish and Water Operations Outlook 12/07/2021 – 12/13/2021

A few showers are possible in the Valley on Monday and Wednesday, with more significant amounts in high mountain areas. Areas of dense fog are likely. A colder weather system bringing snow, light rain and cooler temperatures arrives late week. A return to wetter conditions next week is possible.

Tributary/ Division	**Anticipated Weekly Ranges**	**Related Environmental and Fish Conditions**
Clear Creek	• Current Release: 200 cfs • Anticipated Weekly Range of Releases to Clear Creek: 200 cfs	• Spring-run Chinook Salmon eggs are incubating, hatching, and fry are present • Adult fall-run Chinook Salmon spawning and eggs in the gravel • O. mykiss and steelhead adults present, their migrations are ongoing • Late-fall run Chinook Salmon not present, will be arriving in the coming months (*updated 11/22/2021*)
Sacramento River	• Shasta Storage: 1.14 TAF • Current Release: 3,250 cfs • Anticipated Weekly Range of Releases: 3,250 cfs	• Winter-run Chinook Salmon juveniles present in low numbers above RBDD and distributed throughout the Sacramento River and to the Delta. • Spring-run Chinook Salmon, some eggs and alevins in gravel, fry present • Fall-run Chinook Salmon adults spawning, eggs and alevin in gravel, and some adults waiting to spawn in early December • Adult late fall-run Chinook Salmon holding • Green Sturgeon adults and juvenile present • Adult and juvenile steelhead present (*updated 12/2/21*)

Tributary/ Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Feather River	• Oroville Storage: 1.057 TAF • Current Release: 1,500 cfs • Anticipated Weekly Range of Releases: 1,500 cfs • Daily temperature targets: 51°F (±4°F) at Fish Hatchery	• Fall-run Chinook Salmon spawning, eggs and alevin in gravel. Some fry present • Juvenile and Adult steelhead present • Spring-run Chinook Salmon eggs and alevins in gravel. Some fry present. (*updated 12/7/21*)
American River	• Folsom Storage: 363 TAF • Current Release: 550 cfs • Anticipated Weekly Range of Releases: 550 cfs	• Fall-run Chinook Salmon holding and spawning. Eggs are in gravel. • Juvenile and adult steelhead expected to be present. *(updated 11/18/21)*
Stanislaus River	• New Melones Storage: 865 TAF • Current Release: 200 cfs • Anticipated Range of Weekly Releases: 200 cfs	• Juvenile and adult *O. mykiss* expected to be present • Adult fall-run Chinook Salmon present • Adult Chinook Salmon spawning observed (*updated 11/18/2021*)
Delta	• Freeport: 5,000 to 6,500 cfs • Vernalis: 450 to 650 cfs • Delta Outflow index: 3,000 to 4,000 cfs • Combined Exports: 1,000 to 2,000 cfs • JPP: 800 cfs to 1,700 cfs • CCF: 200 cfs to 300 cfs • Expected OMR Index Values: -1,000 to -2,000 cfs • DCC Gates: Closed as of 11/30 per Proposed Action.	• Juvenile winter-run Chinook Salmon 67-72% yet to enter Delta, 28-32% in Delta, 28-32% exited Delta past Chipps Island • YOY spring-run Chinook Salmon: 97-100% yet to enter Delta, 0-3% in Delta, 0% exited past Chipps Island • Juvenile Steelhead: 93-98% yet to enter Delta, 2-6% in Delta, 0-1% exited Delta past Chipps Island • Adult fall-run Chinook Salmon entering Delta and migrating upstream towards spawning grounds • Adult steelhead present • Adult and juvenile Green Sturgeon present • Subadult Delta Smelt expected to be present in the Sacramento Deep Water Ship Channel and in the vicinity of X2. • Longfin Smelt juveniles >60mm have been detected at the Chipps and may be starting to move into the Delta. Juveniles present in the Suisun Marsh, San Pablo, and Central Bay. Adults present in the Suisun Bay, and Suisun Marsh. Longfin Smelt have been detected in the Sacramento Deep Water Ship Channel and Lower Sacramento River. (*updated 12/7/2021*)

* Environmental and fish conditions updated by respective watershed groups at varying intervals that may not coincide with the weekly range of Water Operations

Table 2a-b: WY 2022 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 2022 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).

Species/run	**Threshold**	**Current Status**	**Weekly Trend**	**Updated**
Green sturgeon	WY 2022 salvage = 74	WY 2022 salvage = 0 (0%)	No change expected	12/5/2021
Natural winter-run Chinook Salmon	WY 2022 loss = TBD *	WY 2022 loss = 0	Possible but unlikely	12/5/2021
Natural Steelhead **	Dec 1 – Mar 31 = 707 (50% of 1,414) Apr 1 – June 15 = 776 (50% of 1,552)	Dec 1 – Mar 31 = 0 (0%) Apr 1 – June 15 = 0 (0%)	Possible	12/5/2021
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 = 5507 Turbidity = 3.83***	No Changed Expected	12/7/2021

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

** Steelhead observed on 10/30/2021 and 11/19/2021 are included in the December 1 through March 31 period

***Some Freeport turbidity data missing from 12/5-6/2021- and 3-day average includes this outage period.

Table 2b. 10-Year Salmonid Cumulative Loss

Species/run	**Threshold**	**Current Status**	**Updated**
Natural winter-run Chinook salmon	Loss = 8,738	Cumulative loss = 204.9 (2.3%)	12/5/2021
Hatchery winter-run Chinook salmon	Loss = 5,356	Cumulative loss = 0 (0%)	12/5/2021

Species/run	Threshold	Current Status	Updated
Natural steelhead	Loss = 6,038 (Dec 1 – Mar 31) Loss = 5,826 (Apr 1 – June 15)	Cumulative loss = 446.59 (7.4%, Dec 1 – Mar 31) 374.8 (6.4%, Apr 1 – June 15)	12/5/2021

Table 3a-d: Relevant Water Year 2022 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.	10/4/21	Jan. 1 - Jun. 30 (when ≥ 5% of spring-run or winter- run in Delta)
Winter-run yearly loss (8.6.1)	Nov. 1 - Jun. 30	In effect (Based on JPE Value)	TBD (Based on JPE guidance)	Current yearly WR loss (natural) = 0; Current yearly WR loss (hatchery) = 0	ossible but unlikely for natural Winter-run	12/6/21	Nov. 1 - Jun. 30
Winter-run discrete daily loss (8.6.2)	Nov. 1 - Dec. 31	In effect	12/1-12/31: loss 26/day unclipped older juv. Winter-run	max single daily loss from previous week = 0.00 fish (no WR observed yet)	No change expected	12/6/21	Nov. 1 - Dec. 31

Action	Timeframe	Current Action Status	Threshold(s)	**Current Relevant Data**	**Weekly Trend**	**Last Updated**	**Comments**
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.	11/1/21	Feb. 1 - Jun. 30

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	- three-day Freeport daily flow running avg >= 25,000 AND [three-day Freeport turbidity running avg >=50 NTU OR Smelt Monitoring Team recommendation]	Dec. 1 - Jan. 31	In effect	- three-day Freeport daily flow running avg >= 25,000 AND [three-day Freeport turbidity running avg >=50 NTU OR Smelt Monitoring Team recommendation]	Dec. 1 - Jan. 31
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 NTU	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	Dec. 15 - Apr. 1

Action	Timeframe	Current Action Status	Threshold(s)	**Current Relevant Data**	**Weekly Trend**	**Last Updated**	**Comments**
						turbidity > 12 NTU	
Larval and/Juvenile Delta smelt Protection (8.5.2)	ongoing	In effect	[1] 5-day cum. salvage of juv. DS >= 1 [average 3-yr FMWT index + 1] OR, 3-day cum. salvage of juv. DS >11	ongoing	In effect	- 5-day cum. salvage of juv. DS >= 1 [average 3-yr FMWT index + 1] OR, 3-day cum. salvage of juv. DS >11	ongoing

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	In effect	Cum. salvage > [most recent FMWT/10] = 1 (Sept.-Oct. Index) fish OR Smelt Monitoring Team determines high likelihood of LFS movement into high-risk areas	Cum salvage total = 0	no change expected	12/6/21	based on salvage data from 12/5/21
OMR Mgt. for Adults (8.4.1)	Dec. 1 -Feb. 28	In effect	- Smelt Monitoring Team recommendation	N.A.	N.A.	N.A.	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 >=2 stations	N.A.	N.A.	N.A.	N.A.
High Flow OMR Off-	Based on the	In effect	Sac. R. at Rio Vista >55,000, OR	Rio Vista = 3,000	N.A.	N.A.	N.A.

Action	Timeframe	Current Action Status	Threshold(s)	**Current Relevant Data**	**Weekly Trend**	**Last Updated**	**Comments**
Ramp for longfin smelt (8.4.3)	status of 8.3.3, 8.4.1, & 8.4.2		SJR at Vernalis >8,000	to 4,000 cfs SJ = 450 to 650 cfs			

Table 3d: OMR

Action	Timeframe	Current Action Status	Threshold(s)	**Current Relevant Data**	**Weekly Trend**	**Last Updated**	**Comments**
OMR Mgmt. Offramp (8.3.2)	Jun. 1 – Jun. 30	Not in effect	- >95% of the Winter-run and Springrun populations have migrated past Chipps Island AND - Current daily average water temperature at Mossdale exceeds22.2°C for 7 nonconsecutive days in June AND - Current daily average water temperature at Prisoners Point exceeds 22.2°C for 7 non-consecutive days in June. - Current daily mean water temperature at CCF is greater than 25°C for three consecutive days	N.A.	N.A.	**10/4/21**	N.A.

Table 4. Fish monitoring gear efficiency and disruptions.

Monitoring Survey	**Notes (as of 11/02/2021)**	**Status ***
Delta	N.A.	N.A.
SWP regular counts, CWT reading, and larval sampling	Active (No disruptions)	1
CVP regular counts, CWT reading, and larval sampling	Active (No disruptions)	1
Smelt Larval Survey	Not Active	4
20mm Survey	Not Active	4
Spring Kodiak Trawl	Not Active	4
Fall Mid-water Trawl	Active (No disruptions)	1
Summer Townet Survey	Not Active	4
Bay Study	Active (No disruptions)	1
DJFMP- Chipps and Sacramento Trawls	Active (5x a week, some potential disruptions due to fog)	2
DJFMP- Seines	Active with one disruption: not sampling San Joaquin Seines (due to low water)	2
EDSM	Active (some disruptions due to fog)	2
EMP	Active (No disruptions)	1
Mossdale	Active (some interruptions)	2
USGS Flow monitoring	Active (No disruptions)	1
Sacramento River	N.A.	N.A.
Red Bluff Diversion Dam screw trap	Active (No disruptions)	1
Knights Landing screw trap	Active (No disruptions)	1

Monitoring Survey	**Notes (as of 11/02/2021)**	**Status ***
Tisdale screw trap	Active (No disruptions)	1
GCID screw trap	Active	1
Redd dewatering and stranding surveys	Not Active	4
Sacramento Carcass and Redd Surveys	Active (No disruptions)	1
Feather River	N.A.	N.A.
Feather River screw trap	Active (weekdays only)	1
San Joaquin River	N.A.	N.A.
SJRRP CDFW Field Monitoring	Active (No disruptions)	1
SJRRP USFWS and USBR Field Monitoring	Active (No disruptions)	1
Stanislaus Fish Weir	Active (No disruptions)	1

* Status: Weekly categories include:

[2] Active (ongoing sampling)

[3] Partial Interruption (some sampling interruptions)

[4] Interrupted (sampling fully suspended)

[5] Not Active (sampling not scheduled)