Weekly Fish and Water Operations Outlook 11/24/2020 – 11/30/2020

Light showers over mountains are possible on Wednesday, otherwise dry weather this week and weekend. Mild days and cool nights, with temperatures close to average for late November. Minimum monthly average Delta Outflow of 4,500 cfs for November.

Tributary/Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Clear Creek	• Current Release: 215 cfs • Anticipated weekly range: 215 cfs	• Spring-run spawning completed by mid-November, fry and juveniles are rearing in river. • Fall-run Chinook salmon spawning underway. • Steelhead juveniles rearing.
Sacramento River	• Shasta Storage: 2.037 MAF • Current Release: 4,000 cfs • Anticipated Weekly Range of Releases to Sacramento: 4,000 cfs - 3,500 cfs • Temperature compliance targets: 56°F at CCR gauge	• Juvenile winter-run Chinook salmon passage at Red Bluff Diversion Dam (BY20 total through 11/17/2020: 1,759,210 fish; average historic passage (2010 – 2019) as of 11/22: 87.5%) • Late fall-run Chinook salmon and steelhead juveniles rearing • Green sturgeon adults and juveniles present. Adults are being acoustically tagged. • Adult fall-run Chinook salmon starting spawning. • Juvenile spring-run Chinook salmon passage at Red Bluff Diversion Dam (BY20 total through 11/17/2020: 81,726 fish; average historic passage (2010 – 2019) as of 11/22: 14.2%)
Feather River	• Oroville Storage: 1.353 MAF • Current Release: 2,450 cfs • Anticipated Weekly Range of Releases to Feather: 2,450 – 2,200 cfs • Daily average temperature compliance targets: 51 ± 4°F at Fish Hatchery gage	• Spring-run Chinook salmon adults spawning is completed, fry and juveniles are rearing in river • Green sturgeon adults holding. • Juvenile steelhead rearing. • Adult fall-run Chinook salmon adults are spawning.

Tributary/Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
American River	• Folsom Storage: 0.333 MAF • Current Release: 1,250 cfs • Anticipated Weekly Range of Releases to American: 1,250 cfs • New temperature compliance target as of 11/1/2020 at Hazel Avenue: 56°F • Temporary power bypass occurring, stepped down 11/25-11/26	• Juvenile steelhead rearing. • Adult fall-run Chinook salmon immigrating and spawning.
Stanislaus River	• New Melones Storage: 1.508 MAF • Current Release to Stanislaus: 200 cfs • Anticipated Range of Weekly Releases to Stanislaus: 200 cfs	• Juvenile steelhead rearing through summer/fall. • As of 11/23/2020, 2 *O. mykiss* passed the weir to date this water year. • Numbers of returning adult fall-run Chinook salmon are lower than historically observed and similar to last year. • Fall-run Chinook salmon are spawning.
Delta	• Freeport: 7,500 to 9,500 cfs • Vernalis: 700 to 1200 cfs • Delta Outflow index: 3,500 to 5,500 cfs • Combined Exports: 3,000 to 4,800 cfs • JPP: 1000 to 1800 cfs CCF: 2000 to 4000 cfs • Expected OMR Index Values: -2,500 to -4,500 cfs • DCC: Opened 11/25, closed 12/1	• Green sturgeon adult and juveniles present. • Adult fall-run Chinook salmon and steelhead immigrating through Delta • 97-99% winter-run Chinook salmon juveniles yet to enter the Delta and 1-3% in Delta. • 99-100% YOY spring-run Chinook salmon juveniles yet to enter the Delta and 0-1% in Delta. • 99-100% steelhead juveniles yet to enter the Delta and 0-1% in Delta. • Based on our understanding of life history and limited distribution data, Delta Smelt adults would be holding in Suisun Marsh and west of the Sacramento-San Joaquin confluence in anticipation of migration.

Table 2. WY 2021 relevant Fish and Environmental Criteria and Status in 2019 Reclamation LTO Action and NMFS and USFWS Biological Opinions. Cumulative loss for the duration of 2019 Biological Opinion began upon signature of ROD, 2/19/2020.

Species/run	Threshold	Current Status	Trend	Updated through
Green sturgeon	WY 2021 salvage = **74**	WY 2021 salvage = **0**	No change expected	11/23/2020
Natural winter-run Chinook salmon	WY 2021 loss = **TBD** 10-year cumulative loss = **8,738**	WY 2021 loss = **0** Cumulative loss = **183** (**2.1**%)	No change expected	11/23/2020
Hatchery winter-run Chinook salmon	WY 2021 loss = **NA** 10-year cumulative loss = **5,356**	WY 2021 loss = **NA** Cumulative loss = **0** (**0**%)	No change expected	11/23/2020
Natural steelhead	WY 2021 loss = **0** 10-year cumulative loss = **11,864**	WY 2021 loss = **0** Cumulative loss = **727** (**6.1**%)	No change expected	11/23/2020
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. flows = 9371cfs turbidity =3.33 FNU	Not Applicable until Dec. 1	11/24/2020

Table 3a-d: Relevant Water Year 2021 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**	**N.A**	**N.A**
Winter-run yearly loss (8.6.1)	Nov. 1 - Jun. 30	In effect	- cum. loss of unclipped [1.17% of JPE] (natural) Winter-run = TBD - cum. loss of [0.12% of JPE] clipped (hatchery) Winter-run = TBD	**Current yearly loss = 0** **0 natural, 0 hatchery**	**no change expected**	**11/23/20**	**Based on 11/22/20 salvage data**
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 single daily loss from previous week = 0.00 fish (no WR observed yet)**	**no change expected**	**11/23/20**	**Based on 11/22/20 salvage data**
Winter-run relative daily loss (8.6.3)	Jan. 1 - May 31	Not in effect	1/1 - 1/31: 0.00635% loss of Winter-run JPE = TBD 2/1 - 2/28: 0.00991% = TBD 3/1 - 3/31: 0.0146% = TBD 4/1 - 4/30: 0.00507% = TBD 5/1 - 5/31: 0.0077% = TBD	**N.A**	**N.A**	**N.A**	**N.A**
Spring-run surrogate protection (8.6.4)	Feb. 1 - Jun. 30	Not in effect	- Feather CWT Spring-run surrogates cum. loss >0.25% for any release group OR - Coleman or Nimbus Fall-run cum. loss >0.25% for any release group	**N.A**	**N.A**	**N.A**	**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	Not 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]	**N.A**	**N.A**	**N.A**	**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 until April 1 ,(comes first - avg. OBI turbidity > 12 NTU	**N.A**	**N.A**	**N.A**	**N.A**
Larval and/Juvenile Delta smelt Protection (8.5.2)	ongoing	In effect	- 5-day cum. salvage of juv. DS >= 1.67 [average 3-yr FMWT index + 1] OR, - 3-day cum. salvage of juv. DS >11	**current 5-day salvage = 0**	**no change expected**	**11/23/20**	**Based on salvage data from 11/22/20**

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] = 1.2 fish OR - Smelt Monitoring Team determines high likelihood of LFS movement into high-risk areas	**N.A**	**N.A**	**N.A**	**N.A**
OMR Mgt. for Adults (8.4.1)	Dec. 1 - Feb. 28	Not 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-Ramp for longfin smelt (8.4.3)	Based on the status of 8.3.3, 8.4.1, & 8.4.2	Not in effect	- Sac. R. at Rio Vista >55,000, OR - SJR at Vernalis >8,000	**Rio Vista = 3,000 to 7,500 cfs** **SJ = 700 to 1,200 cfs**	**N.A**	**11/23/20**	**N.A**

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 Spring-run populations have migrated past Chipps Island AND - Current daily average water temperature at Mossdale exceeds22.2°C for 7 non-consecutive 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**	**N.A**	**N.A**