Weekly Fish and Water Operations Outlook 1/5/2021 – 1/11/2021

Stormy, with heavy precipitation and snow in mountain regions on Monday. Tuesday and most of Wednesday are dry. Some additional precipitation and snow, in lighter amounts, are likely for the remainder of the week. Minimum monthly Delta Outflow is 4500 cfs; Old and Middle River Management season began on January 1.

Tributary/ Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Clear Creek	• Current Release: 215 cfs • Anticipated weekly range: 215 cfs	• Spring-run Chinook salmon fry and juveniles are rearing. Some juveniles may be initiating downstream migration. • Fall-run Chinook salmon spawning is winding down. Most eggs incubating in gravel, some are hatching and fry are emerging. Some fry are beginning to migrate downstream. • Steelhead juveniles rearing. Adults are in Clear Creek, some adult spawning is occurring.
Sacramento River	• Shasta Storage: 2.037 MAF • Current Release: 3,250 cfs • Anticipated Weekly Range of Releases to Sacramento: 3,250 cfs	• Juvenile winter-run Chinook salmon passage at Red Bluff Diversion Dam (BY20 total through 12/16/2020: 1,881,286 fish; average historic passage (2011 – 2019) as of 01/03: 96.5%) • Juvenile spring-run Chinook salmon passage at Red Bluff Diversion Dam (BY20 total through 12/16/2020: 124,278 fish; average historic passage (2011 – 2019) as of 01/03: 19.6%) • Fall-run Chinook salmon spawning is winding down. Most eggs incubating in gravel, some are hatching and fry are emerging. Some fry are beginning to migrate downstream. • Late fall-run Chinook salmon and steelhead juveniles rearing. Juveniles are beginning to migrate downstream. • Adult and juvenile steelhead are in river, some spawning is occurring. • Green sturgeon adults and juveniles present.
Feather River	• Oroville Storage: 1.238 MAF • Current Release:1,250 cfs • Anticipated Weekly Range of Releases to Feather: 1,250 cfs • Daily average temperature compliance targets: 55°F at Fish Hatchery gage	• Spring-run Chinook salmon fry and juveniles are rearing in river. Some juveniles may be initiating downstream migration. • Fall-run Chinook salmon spawning is winding down. Most eggs incubating in gravel, some are hatching and fry are emerging. Some fry are beginning to migrate downstream. • Juvenile steelhead rearing. Adults in the river, some spawning is occurring. • Green sturgeon adults holding.

Tributary/ Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
American River	• Folsom Storage: 0.288 MAF • Current Release: 1,185 cfs • Anticipated Weekly Range of Releases to American: 1,185 cfs	• Juvenile steelhead rearing. Adults in the river, some spawning is occurring. • Fall-run Chinook salmon spawning is still occurring. Most eggs incubating in gravel, some are hatching and fry are emerging. Some fry are beginning to migrate downstream. • Peak Chinook salmon carcass observation occurred during the week of 12/21/2020.
Stanislaus River	• New Melones Storage: 1.550 MAF • Current Release to Stanislaus: 200 cfs • Anticipated Range of Weekly Releases to Stanislaus: 200 – 1,000 cfs	• Juvenile steelhead rearing. Adults in the river, some spawning is occurring. • As of 1/3/2021, 7 *O. mykiss* passed the weir this water year. 1 of those 7 fish were clipped. • Numbers of returning adult fall-run Chinook salmon are lower than historically observed and similar to last year. • Fall-run Chinook salmon spawning is winding down. Most eggs incubating in gravel, some are hatching, earliest fry are emerging.
Delta	• Freeport: 7,500 to 11,000 cfs • Vernalis: 900 to 1200 cfs • Delta Outflow index: 5,000 to 8,500 cfs • Combined Exports: 2,800 to 5,300 cfs • JPP: 800 to 1,800 cfs • CCF: 2,000 to 3,500 cfs • Expected OMR Index Values: -2,000 to -5,000 cfs • DCC: Closed	• Green sturgeon adult and juveniles present. • Adult fall-run Chinook salmon and steelhead immigrating through Delta • Adult winter-run Chinook salmon historically begin to emigrate into the Delta system. • 55-85%winter-run Chinook salmon juveniles yet to enter the Delta and 15-45% in Delta. • 91-94% YOY spring-run Chinook salmon juveniles yet to enter the Delta and 6-9% in Delta. • 94-95% steelhead juveniles yet to enter the Delta and 5-6% 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. • Based on Chipps Island monitoring and EDSM, adult and age-1 Longfin Smelt have been detected at Chipps Island and in Suisun Marsh.. Larval Longfin Smelt were detected on the San Joaquin River at Jersey Point which indicates spawning and hatching are underway.

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**	**Weekly Salvage Trend**	**Updated through**
Green sturgeon	WY 2021 salvage = **74**	WY 2021 salvage = **0**	No change expected	1/3/2021
Natural winter-run Chinook salmon	Interim WY 2021 loss = 50% of 3,659 = **1,829** 10-year cumulative loss = **8,738**	WY 2021 loss = **0** Cumulative loss = **183** (**2.1**%)	No change expected	1/3/2021
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	1/3/2021
Natural steelhead	WY 2021 loss Dec 1 – Mar 31 = 50% of 1,414 = **707** 10-year cumulative loss December 1 – March = **6,038** April 1 - June 15 = **5,826**	WY 2021 loss Dec 1 – Mar 31 loss = **0 (0%)** Cumulative loss Dec 1 – Mar 31 = **402 (6.7%)** April 1 – Jun 15 = **325 (5.6%)**	No change expected	1/3/2021
Delta smelt	• Running 3-day avg. flows at Freeport > 25,000 cfs • Running 3-day avg. turbidity at Freeport => 50 FNU	• Freeport 3-day avg. flows 7824cfs • turbidity = 5.32 FNU	No change expected	1/5/2021

Table 3a-c: 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)*	In effect	- 5% of the Winter-run or Spring-run population in Delta	**10-35% of the Winter Juveniles are in the Delta**	**no change expected**	**01/04/21**	**Based on Action Assessment from 12/29/20 SaMT call**
Winter-run yearly loss (8.6.1)	Nov. 1 - Jun. 30	In effect (Based on interim JPE Value)	- cum. loss of unclipped (natural) Winter-run [1.17% of JPE] = **3,659** cum. loss of clipped (hatchery) Winter-run [0.12% of JPE] = **117**	**Current yearly loss = 0 0 natural, 0 hatchery**	**no change expected**	**01/04/21**	**Based on 1/03/21 salvage data**
Winter-run discrete daily loss (8.6.2)	Nov. 1 - Dec. 31	Not 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	1/4/21	Action 8.6.2 ended on 12/31/20 per ITP
Winter-run relative daily loss (8.6.3)	Jan. 1 - May 31	In effect (Based on interim JPE Value)	**1/1 - 1/31: 0.00635% = 19.86** 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**	**max single daily loss from previous week = 0.00 fish (no WR observed yet)**	**no change expected**	**01/04/21**	**Based on 1/03/21 salvage data**
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	**N.A**	**N.A**	**N.A**	**N.A**

Action	Timeframe	Current Action Status	Threshold(s)	**Current Relevant Data**	**Weekly Trend**	**Last Updated**	**Comments**
			group				

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 FNU OR Smelt Monitoring Team recommendation]	**FPT 3-day flow: 8,187 cfs** **Turbidity: 5.13 FNU**	**No change from last week**	**1/4/21**	
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 [average 3-yr FMWT index + 1] OR, 3-day cum. salvage of juv. DS >11	**current 5-day salvage = 0**	**No change from last week**	**1/4/21**	**Based on salvage data from 1/3/21**

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, but not triggered	- Cum. salvage > [most recent FMWT/10] = 3 fish OR - Smelt Monitoring Team determines high likelihood of LFS movement into high-risk areas	**Cumulative Salvage = 0**	**No change from last week**	**1/4/21**	**Based on salvage data from 1/3/21**
OMR Mgt. for Adults (8.4.1)	Dec. 1 -Feb. 28	Not in effect, offramped	- 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	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	**SLS #13: 3 LFS larvae at Jersey Point 12/28**	**Next larval monitoring will happen 1/11-13**	**1/4/21**	
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	- Sac. R. at Rio Vista >55,000, OR SJR at Vernalis >8,000	**Rio Vista = 5,500 to 8,000 cfs** **SJ = 900 to 1,200 cfs**		**1/04/21**	

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	**N.A.**	**N.A.**	**N.A.**	**N.A.**

			consecutive days				