Weekly Fish and Water Operations Outlook 1/12/2021 – 1/18/2021

Dry this week, with morning and evening fog in Valley; sometimes heavy. Some precipitation in far northern, mountain regions on Tuesday and Wednesday; otherwise continued dry conditions with high pressure ridge building.

Tributary/ Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Clear Creek	• Current Release: 215 cfs • Anticipated weekly range: 200 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: 2.066 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 12/31/2020: 1,915,004 fish; average historic passage (2011 – 2019) as of 01/10: 96.9%) • Juvenile spring-run Chinook salmon passage at Red Bluff Diversion Dam (BY20 total through 12/31/2020: 135,231 fish; average historic passage (2011 – 2019) as of 01/10: 19.9%) • Fall-run Chinook salmon spawning is winding down. Most eggs incubating in gravel, some are hatching and fry are emerging and beginning to migrate downstream. • Late fall-run Chinook salmon and steelhead juveniles rearing and 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: 1.233 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: 0.284 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: 1.551 MAF • Current Release to Stanislaus: 200 cfs • Anticipated Range of Weekly Releases to Stanislaus: 200 cfs	• Juvenile steelhead rearing. Adults in the river, some spawning is occurring. • As of 1/10/2021, 8 *O. mykiss* passed the weir this water year. 1 of those 8 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 9,500 cfs • Vernalis: 900 to 1200 cfs • Delta Outflow index: 5,000 to 6,500 cfs • Combined Exports: 1,800 to 3,800 cfs • JPP: 800 to 1,800 cfs • CCF: 1,000 to 2,000 cfs • Expected OMR Index Values: -1,000 to -3,500 cfs • DCC: Anticipated to remain 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. • 45-80% winter-run Chinook salmon juveniles yet to enter the Delta and 20-55%% in Delta. • 86-89% YOY spring-run Chinook salmon juveniles yet to enter the Delta and 11-14% in Delta. • 94-90% steelhead juveniles yet to enter the Delta and 10-16% in Delta. • Based on our understanding of life history and limited distribution data, Delta Smelt adults would be present in Suisun Marsh and west of the Sacramento-San Joaquin confluence in anticipation of migration. The juvenile Delta Smelt detected in the Sacramento Deep Water Ship Channel during the week of 1/4/2021 may be a freshwater resident, and may not be representative of migratory movement. • 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 2a-b: 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.

Table 2a: WY 2021 Salmonid Current Loss and Delta Smelt abiotic conditions. Hatchery and natural winter-run Chinook salmon, spring-run Chinook salmon surrogates, and natural steelhead relevant action(s): Additional Real-Time OMR Restrictions and Performance Objectives (4.10.5.10.2). Delta smelt relevant action(s): Onset of OMR Management (4.10.5.10.1).

Species/run	Threshold	Current Status	Weekly Salvage Trend	Updated
Green sturgeon	WY 2021 salvage = 74	WY 2021 salvage = 0 (0%)	No change expected	1/10/2021
Natural winter-run Chinook salmon	Interim WY 2021 loss = 1,829 (50% of 3,659)	WY 2021 loss = 0 (0%)	No change expected	1/10/2021
Hatchery winter-run Chinook salmon	Interim WY 2021 loss = 59 (50% of 117)	WY 2021 loss = NA	No change expected	1/10/2021
Hatchery yearling spring-run Chinook salmon surrogates	> 0.5% of each release group: 1) 1/8/2021: 66,912 = 334.6 2) TBD (not released) 3) TBD (not released)	1) 0 (0%) 2) NA 3) NA	Expected to increase	1/10/2021
Natural steelhead	Dec 1 – Mar 31 = 707 (50% of 1,414)	Dec 1 – Mar 31 = 0 (0%)	Expected to increase	1/10/2021
Delta smelt	• Running 3-day average flows at Freeport > 25,000 cfs • Running 3-day average turbidity at Freeport => 50 FNU	• Flows = 8567 cfs • Turbidity = 5.86 FNU	No change expected	1/12/2021

Table 2b: 10-Year Salmonid Cumulative Loss

Species/run	Threshold	Current Status	Updated
Natural winter-run Chinook salmon	Loss = 8,738	Cumulative loss = 183 (2.1%)	1/10/2021
Hatchery winter-run Chinook salmon	Loss = 5,356	Cumulative loss = 0 (0%)	1/10/2021

Species/run	Threshold	Current Status	Updated
Natural steelhead	December 1 – March 30 Loss = 6,038 April 1 - June 15 Loss = 5,826	Cumulative loss Dec 1 – Mar 31 = 402 (6.7%) April 1 – Jun 15 = 325 (5.6%)	1/10/2021

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	**15-45% of the Winter Juveniles are in the Delta**	**no change expected**	**01/11/21**	**Based on Action Assessment from 1/5/21 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**	**01/11/21**	**Based on 1/10/21 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**	**max single daily loss from previous week**	**no change expected**	**01/11/21**	**Based on 1/10/21 salvage data**

Action	Timeframe	Current Action Status	Threshold(s)	**Current Relevant Data**	**Weekly Trend**	**Last Updated**	**Comments**
			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**	**= 0.00 fish (no WR observed yet)**			
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	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: 9009 cfs** **Turbidity: 5.81 FNU**	**No change from last week**	**1/11/21**	

Action	Timeframe	Current Action Status	Threshold(s)	**Current Relevant Data**	**Weekly Trend**	**Last Updated**	**Comments**
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**	**1/11/21**	**Based on salvage data from 1/10/21**

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**	**1/11/21**	**Based on salvage data from 1/10/21**
OMR Mgt. for Adults (8.4.1)	Dec. 1 -Feb. 28	Not in effect, off-ramped	- Smelt Monitoring Team recommendation	**N.A.**	**N.A.**	**N.A.**	**N.A.**
Larval and	Jan 1 – Jun 30	In effect	- LFS larvae or juveniles	**SLS #13: 3 LFS**	**Next larval**	**1/11/21**	

Action	Timeframe	Current Action Status	Threshold(s)	**Current Relevant Data**	**Weekly Trend**	**Last Updated**	**Comments**
Juvenile longfin smelt Entrainment Protection (8.4.2)			in >=4 SLS or 20 mm stations in central and south Delta, OR - LFS catch/tow >5 larvae or juveniles in >=2 stations	**larvae at Jersey Point 12/28**	**monitoring will happen 1/11-13**		
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 = 5,000 to 7,000 cfs** **SJ = 900 to 1200 cfs**		**1/11/21**	

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

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