

# Weekly Fish and Water Operations Outlook 12/08/2020 – 12/14/2020

Continued dry conditions with above average temperatures. Forecast for extended period has a possibility of precipitation by early next week. The minimum monthly average Delta Outflow is 4,500 cfs for December.

Tributary/ Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Clear Creek	<ul style="list-style-type: none"> <li>• Current Release: 215 cfs</li> <li>• Anticipated weekly range: 215 cfs</li> </ul>	<ul style="list-style-type: none"> <li>• Spring-run spawning completed by mid-November, fry and juveniles are rearing in river.</li> <li>• Fall-run Chinook salmon spawning, Eggs in gravel.</li> <li>• Steelhead juveniles rearing. Adults in the river, December is start of spawning.</li> </ul>
Sacramento River	<ul style="list-style-type: none"> <li>• Shasta Storage: 2.018 MAF</li> <li>• Current Release: 3,500 cfs (with possible cuts to 3250 cfs)</li> <li>• Anticipated Weekly Range of Releases to Sacramento: 3,500 cfs to - 3,250 cfs</li> </ul>	<ul style="list-style-type: none"> <li>• Juvenile winter-run Chinook salmon passage at Red Bluff Diversion Dam (BY20 total through 12/1/2020: 1,835,780 fish; average historic passage (2010 – 2019) as of 12/06: 92.0%)</li> <li>• Late fall-run Chinook salmon and steelhead juveniles rearing</li> <li>• Green sturgeon adults and juveniles present.</li> <li>• Adult fall-run Chinook salmon spawning, eggs in gravel.</li> <li>• Juvenile spring-run Chinook salmon passage at Red Bluff Diversion Dam (BY20 total through 12/1/2020: 103,536 fish; average historic passage (2010 – 2019) as of 12/06: 17.2%)</li> </ul>
Feather River	<ul style="list-style-type: none"> <li>• Oroville Storage: 1.284 MAF</li> <li>• Current Release: 1,650 cfs</li> <li>• Anticipated Weekly Range of Releases to Feather: 1,650 – 1,250 cfs</li> <li>• Daily average temperature compliance targets: 55°F at Fish Hatchery gage</li> </ul>	<ul style="list-style-type: none"> <li>• Spring-run Chinook salmon adults spawning is completed, fry and juveniles are rearing in river</li> <li>• Green sturgeon adults holding.</li> <li>• Juvenile steelhead rearing. Adults in the river, December is start of spawning.</li> <li>• Adult fall-run Chinook salmon adults spawning, eggs in gravel.</li> </ul>
American River	<ul style="list-style-type: none"> <li>• Folsom Storage: 0.313 MAF</li> <li>• Current Release: 1,250 cfs</li> <li>• Anticipated Weekly Range of Releases to American: 1,250 cfs</li> </ul>	<ul style="list-style-type: none"> <li>• Juvenile steelhead rearing. Adults in the river, December is start of spawning.</li> <li>• Adult fall-run Chinook salmon spawning, eggs in gravel.</li> </ul>

Tributary/ Division	Anticipated Weekly Ranges	Related Environmental and Fish Conditions
Stanislaus River	<ul style="list-style-type: none"> <li>● New Melones Storage: 1.521 MAF</li> <li>● Current Release to Stanislaus: 200 cfs</li> <li>● Anticipated Range of Weekly Releases to Stanislaus: 200 cfs</li> </ul>	<ul style="list-style-type: none"> <li>● Juvenile steelhead rearing through summer/fall. Adults in the river, December is start of spawning.</li> <li>● As of 12/07/2020, 4 <i>O. mykiss</i> passed the weir this water year. 3 of those 4 fish are unclipped.</li> <li>● Numbers of returning adult fall-run Chinook salmon are lower than historically observed and similar to last year.</li> <li>● Fall-run Chinook salmon spawning, few eggs in gravel.</li> </ul>
Delta	<ul style="list-style-type: none"> <li>● Freeport: 6,500 to 8,500 cfs</li> <li>● Vernalis: 700 to 900 cfs</li> <li>● Delta Outflow index: 4,000 to 5,500 cfs</li> <li>● Combined Exports: 1,300 to 3,500 cfs</li> <li>● JPP: 800 to 1,000 cfs CCF: 500 to 2,500 cfs</li> <li>● Expected OMR Index Values: -1,000 to -3,500 cfs</li> <li>● DCC: Closed</li> </ul>	<ul style="list-style-type: none"> <li>● Green sturgeon adult and juveniles present.</li> <li>● Adult fall-run Chinook salmon and steelhead immigrating through Delta</li> <li>● Adult winter-run Chinook salmon historically begin to emigrate into the Delta system.</li> <li>● 95-99% winter-run Chinook salmon juveniles yet to enter the Delta and 1-5% in Delta.</li> <li>● 98-100% YOY spring-run Chinook salmon juveniles yet to enter the Delta and 0-2% in Delta.</li> <li>● 99-100% steelhead juveniles yet to enter the Delta and 0-1% in Delta.</li> <li>● 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.</li> </ul>

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.

<b>Species/run</b>	<b>Threshold</b>	<b>Current Status</b>	<b>Trend</b>	<b>Updated through</b>
Green sturgeon	WY 2021 salvage = <b>74</b>	WY 2021 salvage = <b>0</b>	No change expected	12/06/2020
Natural winter-run Chinook salmon	WY 2021 loss = <b>TBD</b> 10-year cumulative loss = <b>8,738</b>	WY 2021 loss = <b>0</b> Cumulative loss = <b>183 (2.1%)</b>	No change expected	12/06/2020
Hatchery winter-run Chinook salmon	WY 2021 loss = <b>NA</b> 10-year cumulative loss = <b>5,356</b>	WY 2021 loss = <b>NA</b> Cumulative loss = <b>0 (0%)</b>	No change expected	12/06/2020
Natural steelhead	WY 2021 loss Dec 1 – Mar 31 = 50% of 1,414 = <b>707</b>  10-year cumulative loss December 1 – March = <b>6,038</b> April 1 - June 15 = <b>5,826</b>	Dec 1 – Mar 31 loss = <b>0 (0%)</b>  Cumulative loss Dec 1 – Mar 31 = <b>402 (6.7%)</b> April 1 – Jun 15 = <b>325 (5.6%)</b>	No change expected	12/06/2020
Delta smelt	<ul style="list-style-type: none"> <li>• Running 3-day avg. flows at Freeport &gt; 25,000 cfs</li> <li>• Running 3-day avg. turbidity at Freeport =&gt; 50 FNU</li> </ul>	<ul style="list-style-type: none"> <li>• Freeport 3-day avg. flows =8122 cfs</li> <li>• turbidity =2.65FNU</li> </ul>	No change expected	12/8/2020

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

<u>Action</u>	<u>Timeframe</u>	<u>Current Action Status</u>	<u>Threshold(s)</u>	<u>Current Relevant Data</u>	<u>Weekly Trend</u>	<u>Last Updated</u>	<u>Comments</u>
OMR Mgmt. triggered (8.3.2)	Jan. 1 - Jun. 30 <i>(when &gt;= 5% of spring-run or winter-run in Delta)</i>	Not in effect	- 5% of the Winter-run or Spring-run population in Delta	<b>N.A</b>	<b>N.A</b>	<b>N.A</b>	<b>N.A</b>
Winter-run yearly loss (8.6.1)	Nov. 1 - Jun. 30	In effect	- cum. loss of 10,002 unclipped (natural) Winter-run [1.17% of JPE] cum. loss of 110 clipped (hatchery) Winter-run [0.12% of JPE]	<b>Current yearly loss = 0 0 natural, 0 hatchery</b>	<b>no change expected</b>	<b>12/7/20</b>	<b>Based on 12/06/20 salvage data</b>
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	<b>max single daily loss from previous week = 0.00 fish (no WR observed yet)</b>	<b>no change expected</b>	<b>12/7/20</b>	<b>Based on 12/06/20 salvage data</b>
Winter-run relative daily loss (8.6.3)	Jan. 1 - May 31	Not in effect	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	<b>N.A</b>	<b>N.A</b>	<b>N.A</b>	<b>N.A</b>
Spring-run surrogate protection (8.6.4)	Feb. 1 - Jun. 30	Not in effect	- Feather CWT Spring-run surrogates cum. loss	<b>N.A</b>	<b>N.A</b>	<b>N.A</b>	<b>N.A</b>

<u>Action</u>	<u>Timeframe</u>	<u>Current Action Status</u>	<u>Threshold(s)</u>	<u>Current Relevant Data</u>	<u>Weekly Trend</u>	<u>Last Updated</u>	<u>Comments</u>
			>0.25% for any release group <u>OR</u>  - Coleman or Nimbus Fall-run cum. loss  >0.25% for any release group				

Table 3b: Delta Smelt

<u>Action</u>	<u>Timeframe</u>	<u>Current Action Status</u>	<u>Threshold(s)</u>	<u>Current Relevant Data</u>	<u>Weekly Trend</u>	<u>Last Updated</u>	<u>Comments</u>
Integrated Early Winter Pulse Protection ('First Flush') (8.3.1)	Dec. 1 - Jan. 31	In effect	- three-day Freeport daily flow running avg $\geq 25,000$ <u>AND</u>  [three-day Freeport turbidity running avg $\geq 50$ NTU <u>OR</u> Smelt Monitoring Team recommendation]	<b>N.A.</b>	<b>N.A.</b>	<b>N.A.</b>	<b>N.A.</b>
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	<b>N.A.</b>	<b>N.A.</b>	<b>N.A.</b>	<b>N.A.</b>
Larval and/Juvenile Delta smelt Protection (8.5.2)	ongoing	In effect	- 5-day cum. salvage of juv. DS $\geq 1.67$ [average 3-yr	<b>current 5-day salvage = 0</b>	<b>no change expected</b>	<b>12/07/20</b>	<b>Based on salvage data from 12/06/20</b>

<u>Action</u>	<u>Timeframe</u>	<u>Current Action Status</u>	<u>Threshold(s)</u>	<u>Current Relevant Data</u>	<u>Weekly Trend</u>	<u>Last Updated</u>	<u>Comments</u>
			FMWT index + 1] <u>OR</u>  3-day cum. salvage of juv. DS >11				

Table 3c: Longfin Smelt

<u>Action</u>	<u>Timeframe</u>	<u>Current Action Status</u>	<u>Threshold(s)</u>	<u>Current Relevant Data</u>	<u>Weekly Trend</u>	<u>Last Updated</u>	<u>Comments</u>
Early Adult Protection (8.3.3)	Dec. 1 - Feb. 28	In effect	- Cum. salvage > [most recent FMWT/10] = 1.2 fish <u>OR</u> - Smelt Monitoring Team determines high likelihood of LFS movement into high-risk areas	<b>N.A.</b>	<b>N.A.</b>	<b>N.A.</b>	<b>N.A.</b>
OMR Mgt. for Adults (8.4.1)	Dec. 1 -Feb. 28	Not in effect	- Smelt Monitoring Team recommendation	<b>N.A.</b>	<b>N.A.</b>	<b>N.A.</b>	<b>N.A.</b>
Larval and Juvenile longfin smelt Entrainment Protection (8.4.2)	Jan 1 – Jun 30	Not in effect	- LFS larvae or juveniles in $\geq$ 4 SLS or 20 mm stations in central and south Delta, OR  - LFS catch/tow >5 larvae or juveniles in $\geq$ 2 stations	<b>N.A.</b>	<b>N.A.</b>	<b>N.A.</b>	<b>N.A.</b>
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, <u>OR</u>  SJR at Vernalis >8,000	<b>Rio Vista = 5,000 to 6,500 cfs</b> <b>SJ = 700 to 900 cfs</b>		<b>12/07/20</b>	

Table 3d: OMR

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