BUREAU OF RECLAMATION

Weekly Assessment of CVP and SWP Delta Operations on ESA-listed Species

October 29, 2024

Executive Summary

Operational Conditions

See Weekly Fish and Water Operation Outlook document for October 29 - November 4

Winter-run Chinook Salmon

No loss of natural winter-run Chinook Salmon (by length at date, LAD) has occurred in the past week at the State or Federal fish salvage facilities. Loss of natural winter-run Chinook Salmon at the Central Valley Project (CVP) and State Water Project (SWP) fish collection facilities is unlikely to occur over the next week. 0-1% of juvenile natural winter-run Chinook Salmon from brood year (BY) 2024 are estimated to be present in the Delta.

Spring-run Chinook salmon

No loss of natural spring-run Chinook Salmon (by length at date, LAD) has occurred in the past week at the State or Federal fish salvage facilities. 0% of juvenile natural spring-run Chinook Salmon was estimated in the Delta. It is unlikely that juvenile natural spring-run Chinook Salmon from BY 2024 are present near the DCC gates; CV spring-run Chinook Salmon adults have completed spawning and eggs are in gravel.

Central Valley Steelhead

No loss of natural California CV (CCV) steelhead has occurred in the past week at the State and Federal fish salvage facilities. Loss of Central Valley steelhead at the Central Valley Project (CVP) and State Water Project (SWP) fish collection facilities is unlikely to occur over the next week. 0% of CCV steelhead were estimated in the Delta.

Green Sturgeon

Loss of green sturgeon has not occurred in the past week at the State and Federal fish salvage facilities (WY 2025 total loss = 0 fish, as of 10/28/2024). Loss of green sturgeon is unlikely to occur over the next week due to their rare presence in the South Delta.

Delta Cross Channel Gates

The DCC gates were reopened on 10/11/2024 to maintain Delta water quality for the remainder of the season. Opening of gates will also allow boaters passage to the interior Delta.

Monitoring Teams summary

There were no non-consensus issues to report from the Salmon Monitoring Team.

There were no non-consensus issues to report from the Smelt Monitoring Team.

Operational and Regulatory Conditions

See current Weekly Fish and Water Operation Outlook document.

Biology, Distribution, and Evaluation Winter-run Chinook salmon, Spring-run Chinook salmon, Central Valley Steelhead

Population Status

Winter-run Chinook Salmon

- Delta Life Stages:
    - Juveniles, Adults
- Brood Year 2024 Productivity:
    - Catch at Red Bluff Diversion Dam was beginning to increase in late September, which suggests that juvenile winter-run Chinook Salmon have started their migration towards the middle reaches of the Sacramento River. Tisdale, lower Sacramento, and Knights Landing rotary screw traps have observed winter-run Chinook salmon which further confirms that winter-run Chinook salmon have begun migrating downstream.
    - Hatchery winter-run Chinook salmon: No hatchery winter-run Chinook salmon have been released in WY 2025.
- Supporting Information regarding DCC Management Effects

Spring-run Chinook Salmon

- Delta Life Stages:
    - Young-of-year (YOY) and Yearlings
- Brood Year 2024 Productivity:
    - See additional supporting information in winter-run Chinook Salmon section.
- Supporting Information regarding DCC Management Effects

Central Valley Steelhead

- Delta Life Stages:
    - Spawning Adults, Kelts, Juveniles
- Brood Year 2024 Productivity:
    - See additional supporting information in winter-run Chinook Salmon section.
- Supporting Information regarding DCC Management Effects

Table 1. Salmonid distribution estimates

Location	Yet to Enter Delta (%)	In the Delta (%)	Exited Delta past Chipps Island (%)
Young-of-year (YOY) winter-run Chinook salmon	Current: 98-99% Last Week: 99-100%	Current: 1-2% Last Week: 0-1%	Current: 0% Last Week: 0%
YOY spring-run Chinook salmon	Current: 100% Last Week: 0%	Current: 0% Last Week: 0%	Current: 0% Last Week: 0%
YOY hatchery winter-run Chinook salmon	Current: NA Last Week: NA	Current: NA Last Week: NA	Current: NA Last Week: NA
Natural origin steelhead	Current: 100% Last Week: 100%	Current: 0% Last Week: 0%	Current: 0% Last Week: 0%

Table 2. Historic migration and salvage patterns. Last updated 10/28/2024

Species	Red Bluff Diversion Dam	Tisdale Rst	Knights Landing Rst	SacTrawl Sherwood Catch Index	Chipps Island Trawl Catch Index	Salvage
Chinook, Winter-run, Unclipped	72.7%(66.3%,79.1%) BY: 2014 - 2023	9.2%(3.1%,15.4%) BY: 2014 - 2023	8.5%(2.6%,14.4%) BY: 2014 - 2023	3.8%(-4.8%,12.4%) BY: 2014 - 2023	0.0%(0.0%,0.0%) BY: 2014 - 2023	0.0%(0.0%,0.0%) WY: 2015 - 2024
Chinook, Spring-run, Unclipped	0.4%(-0.2%,1.1%) BY: 2014 - 2023	0.1%(0.0%,0.2%) BY: 2014 - 2023	0.0%(-0.0%,0.1%) BY: 2014 - 2023	0.0%(0.0%,0.0%) BY: 2014 - 2023	0.0%(0.0%,0.0%) BY: 2014 - 2023	0.0%(0.0%,0.0%) WY: 2015 - 2024
Steelhead, Unclipped (December-March)	N/A	N/A	N/A	N/A	N/A	N/A

Table 3. Knight's Landing (KLCI) and Sacramento Seine and Trawl (SCI). No catch indices for juvenile salmonid migration were triggered during the past week.

Date	Knights Landing RST: Winter Chinook: Catch Index	Knights Landing RST: Older Chinook: Catch Index	Sacramento Trawls: Older Chinook: Catch Index	Sacramento Beach Seines: Older Chinook: Catch Index	Alert: Catch Index > 5	Alert: Catch Index 3 < X ≤ 5
2024-10-27	0.0	0.0	N/A	N/A	N/A	N/A
2024-10-26	0.0	0.0	N/A	N/A	N/A	N/A
2024-10-25	0.0	0.0	0	0	N/A	N/A
2024-10-24	0.0	0.0	N/A	N/A	N/A	N/A
2024-10-23	0.0	0.0	0	0	N/A	N/A
2024-10-22	0.0	0.0	N/A	N/A	N/A	N/A
2024-10-21	0.0	0.0	0	0	N/A	N/A
2024-10-20	0.0	0.0	N/A	N/A	N/A	N/A
2024-10-19	0.5	0.5	N/A	N/A	N/A	N/A

Table 4. Mean daily flow and percent change (Wilkins Slough, Deer Creek, Mill Creek; cfs from CDEC) and temperature and percent change (Knights Landing; °F from RST).

Date	Mill Creek (MLM): mean daily flow (cfs)	Mill Creek (MLM): flow percent change	Mill Creek (MLM): Alert	Deer Creek (DCV): mean daily flow (cfs)	Deer Creek (DCV): flow percent change	Deer Creek (DCV): Alert	Wilkins Slough (WLK): mean daily flow (cfs)	Knights Landing RST: water temp. (f)	Alert Trig-gered
10/27/2024	111.3	0.5%	Flow>95cfs	102.7	0.6%	Flow>95cfs	4,319.0	N/A	N/A
10/26/2024	110.8	0.4%	Flow>95cfs	102.1	0.6%	Flow>95cfs	4,292.0	N/A	N/A
10/25/2024	110.3	0.6%	Flow>95cfs	101.5	1.4%	Flow>95cfs	4,399.2	N/A	N/A
10/24/2024	109.7	-0.5%	Flow>95cfs	100.1	0.1%	Flow>95cfs	4,819.8	46.5	N/A
10/23/2024	110.2	0.2%	Flow>95cfs	100.0	1.5%	Flow>95cfs	4,965.4	46.6	N/A
10/22/2024	109.9	-0.1%	Flow>95cfs	98.5	0.1%	Flow>95cfs	5,046.5	46.6	N/A
10/21/2024	110.0	-0.2%	Flow>95cfs	98.4	0.7%	Flow>95cfs	5,134.2	46.6	N/A

Table 5. STARS model simulations for route-specific entrainment, travel times, and survival. Travel time is calculated in days

Stock	Date	Route	Median Travel Time	Survival	Routing Probability
Winter Chinook	2024-10-27	Overall	6.74	0.13	N/A
Winter Chinook	2024-10-27	Sacramento River	6.24	0.13	0.58
Winter Chinook	2024-10-27	Yolo Bypass	10.18	0.51	0.00
Winter Chinook	2024-10-27	Sutter Slough	6.38	0.23	0.14
Winter Chinook	2024-10-27	Steamboat Slough	6.07	0.14	0.15
Winter Chinook	2024-10-27	Interior Delta	9.96	0.04	0.14
Late-fall Chinook	2024-10-27	Overall	12.03	0.41	N/A
Late-fall Chinook	2024-10-27	Delta Cross Channel	N/A	N/A	0.00
Late-fall Chinook	2024-10-27	Georgiana Slough	16.89	0.19	0.26
Late-fall Chinook	2024-10-27	Sacramento River	10.25	0.54	0.46
Late-fall Chinook	2024-10-27	Sutter and Steamboat Slough	10.86	0.43	0.27

Evaluation

1. How much salmonid loss has occurred in the past week?
    a. No loss of juvenile winter-run Chinook Salmon, spring-run Chinook Salmon, or Steelhead has occurred in the past week at the CVP and SWP fish salvage facilities.
2. Were salmonids observed near the DCC gate in the last seven days?
    a. Juvenile salmonids have not been observed this year near the DCC gates and historical monitoring data indicates that they are not present in the Delta in significant numbers at this time.
3. Given forecasted conditions and observations of salmonids, what are the effects of DCC gate operations on salmonids in the next seven days?
    a. It is possible juvenile winter-run Chinook Salmon are present near the DCC gates. Closure of the gates would positively impact any present juvenile salmonids by preventing entrainment into the interior Delta. Closure of the DCC gates, also reduces straying of Mokelumne River adult fall-run Chinook salmon during the fall attraction flow releases.

Attachments

Attachment A. Mokelumne River Pulse Flow Plan

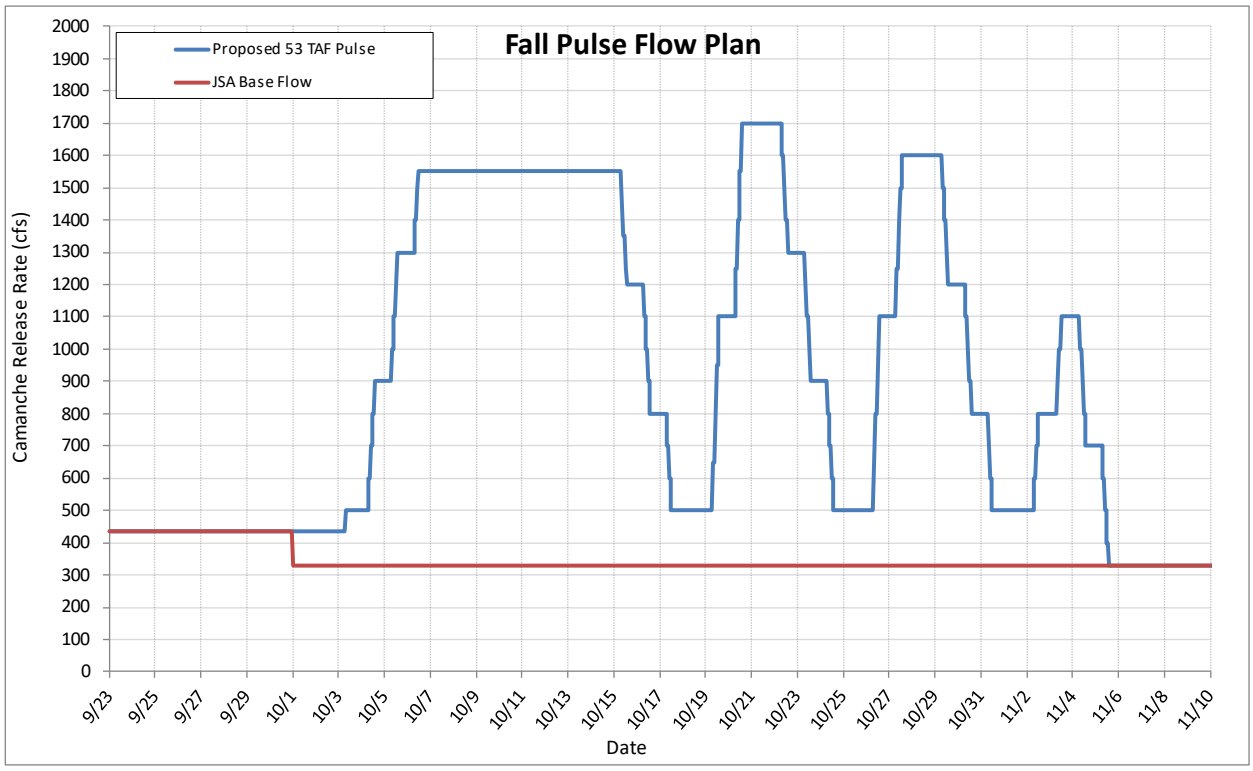

Figure A1. September 2024 Mokelumne River Pulse Flow plan (source: Final Fall Pulse Flow Plan 2024 v7tab: Pulse Flow – Hourly INPUT)

Figure A1 is a line graph of the Mokelumne River Pulse Flow plan that shows Comanche release rates in cubic feet per second from late September to early November. The graph shows the JSA Base Flow from September 23 until November 10, 2024, and the Proposed 53 TAF Pulse from October 1 until November 5, 2023.

Table A1. September 2024 Mokelumne River Pulse Flows Accounting (source: Final Fall Pulse Flow Plan 2024 v7tab: Pulse Flow – Hourly INPUT)

Date	JSA Minimum Release (cfs)	INPUT - Base Flow (cfs)*	Add. Pulse Flow (cfs)	Total Release (cfs)	Daily Release Volume (AF)	Cumulative Release Volume (AF)
9/23/2024	290	435	0	435	863	863
9/24/2024	290	435	0	435	863	1,726
9/25/2024	290	435	0	435	863	2,588
9/26/2024	290	435	0	435	863	3,451
9/27/2024	290	435	0	435	863	4,314
9/28/2024	290	435	0	435	863	5,177

Date	JSA Minimum Release (cfs)	INPUT - Base Flow (cfs)*	Add. Pulse Flow (cfs)	Total Release (cfs)	Daily Release Volume (AF)	Cumulative Release Volume (AF)
9/29/2024	290	435	0	435	863	6,040
9/30/2024	290	435	0	435	863	6,902
10/1/2024	330	330	105	435	863	7,765
10/2/2024	330	330	105	435	863	8,628
10/3/2024	330	330	148	478	949	9,577
10/4/2024	330	330	387	717	1,421	10,998
10/5/2024	330	330	787	1,117	2,215	13,213
10/6/2024	330	330	1120	1,450	2,876	16,089
10/7/2024	330	330	1220	1,550	3,074	19,164
10/8/2024	330	330	1220	1,550	3,074	22,238
10/9/2024	330	330	1220	1,550	3,074	25,312
10/10/2024	330	330	1220	1,550	3,074	28,387
10/11/2024	330	330	1220	1,550	3,074	31,461
10/12/2024	330	330	1220	1,550	3,074	34,536
10/13/2024	330	330	1220	1,550	3,074	37,610
10/14/2024	330	330	1220	1,550	3,074	40,684
10/15/2024	330	330	1024	1,354	2,686	43,370
10/16/2024	330	330	653	983	1,950	45,321
10/17/2024	330	330	295	625	1,240	46,560
10/18/2024	330	330	170	500	992	47,552
10/19/2024	330	330	495	825	1,636	49,188
10/20/2024	330	330	1095	1,425	2,826	52,015
10/21/2024	330	330	1370	1,700	3,372	55,387
10/22/2024	330	330	1153	1,483	2,942	58,329
10/23/2024	330	330	753	1,083	2,149	60,478
10/24/2024	330	330	353	683	1,355	61,833
10/25/2024	330	330	170	500	992	62,825
10/26/2024	330	330	495	825	1,636	64,461
10/27/2024	330	330	1049	1,379	2,736	67,197
10/28/2024	330	330	1270	1,600	3,174	70,370
10/29/2024	330	330	1053	1,383	2,744	73,114
10/30/2024	330	330	653	983	1,950	75,064
10/31/2024	330	330	295	625	1,240	76,304
11/1/2024	330	330	170	500	992	77,296
11/2/2024	330	330	345	675	1,339	78,635
11/3/2024	330	330	645	975	1,934	80,569

Date	JSA Minimum Release (cfs)	INPUT - Base Flow (cfs)*	Add. Pulse Flow (cfs)	Total Release (cfs)	Daily Release Volume (AF)	Cumulative Release Volume (AF)
11/4/2024	330	330	553	883	1,752	82,321
11/5/2024	330	330	166	496	983	83,304
11/6/2024	330	330	0	330	655	83,959
11/7/2024	330	330	0	330	655	84,613
11/8/2024	330	330	0	330	655	85,268
11/9/2024	330	330	0	330	655	85,922
11/10/2024	330	330	0	330	655	86,577
11/11/2024	330	330	0	330	655	87,231
11/12/2024	330	330	0	330	655	87,886
11/13/2024	330	330	0	330	655	88,540
11/14/2024	330	330	0	330	655	89,195
11/15/2024	331	330	0	330	655	89,850
11/16/2024	332	330	0	330	655	90,504
11/17/2024	333	330	0	330	655	91,159
11/18/2024	334	330	0	330	655	91,813
11/19/2024	335	330	0	330	655	92,468
11/20/2024	336	330	0	330	655	93,122
11/21/2024	337	330	0	330	655	93,777
11/22/2024	338	330	0	330	655	94,431
11/23/2024	339	330	0	330	655	95,086
11/24/2024	340	330	0	330	655	95,740
11/25/2024	341	330	0	330	655	96,395
11/26/2024	342	330	0	330	655	97,050
11/27/2024	343	330	0	330	655	97,704
11/28/2024	344	330	0	330	655	98,359
11/29/2024	345	330	0	330	655	99,013
11/30/2024	346	330	0	330	655	99,668