# Weekly Fish and Water Operations Outlook

12/10/2024 – 12/16/2024

## Water Project Operational Intent for Week

Both (CVP and SWP) water projects are operating to the following D-1641 standards: 1) monthly average Delta Outflow (and Rio Vista flow) not less than 4,500 cfs in November and December, 2) E/I ratio no greater than 0.65, and 3) daily Chlorides at Contra Costa Intake (at Rock Slough) no greater than 250 mg/l.

## Biological Context

No ESA biological protections “controlling” water project operations have been “triggered” at this time.

## Forecasted Weather

Breezy northerly winds, slightly cooler temperatures and dry conditions continue through mid-week. The potential for unsettled weather develops near the end of the week.

## Tables

Table 1: Anticipated weekly operational ranges by tributary. Environmental and fish conditions are updated by respective watershed groups at varying intervals that may not coincide with the weekly range of Water Operations shown.

| Tributary/Division | Anticipated Weekly Ranges | Related Environmental and Fish Conditions |
| --- | --- | --- |
| Clear Creek | * Current Release: 200 cfs * Anticipated Weekly Range of Releases: 200 cfs. | * Fall-run Chinook Salmon actively spawning and their eggs incubating. * Spring-run Chinook Salmon eggs are emerging, and juveniles are migrating downstream. * O. mykiss adults are migrating into the creek. * (Updated 12/10/2024) |
| Sacramento River | * Shasta Storage: 2.786 MAF * Current Release: 4,000 cfs * Anticipated Weekly Range of Releases: 4,000 cfs. | * Spring run fry remain in the gravel. * Fall-run adults have completed spawning, fall-run eggs/fry are in the gravel. * Late-fall adults are commencing spawning and holding in the watershed. * Winter-run fry are migrating past RBDD in relatively low numbers. * Small numbers of late fall-run pre-smolts, late fall-run juveniles from last spring, spring-run and fall-run smolts, and O. mykiss juveniles also passing RBDD at this time. * (Updated 12/10/2024) |
| Feather River | * Oroville Storage: 1.930 MAF * Current Release: 1,750 cfs * Anticipated Weekly Range of Releases: 1,750 cfs * Daily temperature maximum: 55 degrees F at Fish Hatchery | * Spring-run Chinook spawning is complete, juveniles are beginning to emerge and are migrating downstream. * Fall-run Chinook salmon adults spawning is nearly complete. * Adult O. mykiss present and migrating upstream. * (Updated 12/10/2024) |
| American River | * Folsom Storage: 315 TAF * Current Release: 2,000 cfs * Anticipated Weekly Range of Releases: 2,000 cfs | * Fall-run Chinook salmon adults are spawning and eggs are incubating. * Fall-run redds are being observed. * (Updated 12/10/2024) |
| Stanislaus River | * New Melones Storage: 1.826 MAF * Current Release: 200 cfs * Anticipated Range of Weekly Releases: 200 cfs. | * Juvenile and adult O. mykiss are present. * Adult fall-run Chinook Salmon are migrating, spawning, and eggs are incubating. * Redds and carcasses are observed in river. * (Updated 12/10/2024) |
| Delta | * Freeport: 12,000 to 20,000 cfs * Vernalis: 1,000 to 2,000 cfs * Delta Outflow index: 3,000 to 10,000 cfs * Combined Exports: 5,200 to 11,400 cfs * JPP: 3,600 cfs to 4,200 cfs * CCF: 1,000 cfs to 7,200 cfs * Expected Daily OMR Index Values: -5,000 to -10,300 cfs * DCC Gates: Closed on 11/18. * X2 = 76 km * Tides: Transition from Neap to Spring; Full Moon on 12/15. | * Yearling Chinook Salmon and juvenile winter-run are migrating into the Delta. * Delta smelt juveniles, sub-adults and adults are expected to be present in the Suisun Marsh, Suisun Bay, Cache Slough, the Sacramento Deepwater Shipping Channel, and the Lower Sacramento River. Three marked adult Delta smelt have been detected from the 11/18/24 release, one in the Sacramento Deepwater Ship Channel on 11/25/24, one in Cache Slough on 11/27/24, and one in the lower Sacramento River on 12/4/24. * A total of 14,880 individual Delta smelt were released 12/9/24 at Lookout Slough. * Larval longfin smelt have been detected in the central and south Delta, Suisun Marsh, Suisun Bay, and the Confluence. * Juvenile longfin smelt have been detected in Suisun Marsh, Suisun Bay, Grizzly Bay, Lower Sacramento River, and at Chipp’s Island. * Adult longfin smelt have been detected in Suisun Marsh, Grizzly Bay, and Chipps Island. * (Updated 12/10/2024) |

Table 2a-b: WY 2025 relevant Fish and Environmental Criteria and Status in 2019 Reclamation LTO Action Cumulative loss for the duration of 2019 Biological Opinion began upon signature of ROD, 2/19/2020.

Table 2a: WY 2025 Salmonid Current Loss and Delta Smelt Abiotic Conditions. Additional Real-Time OMR Restrictions and Performance Objectives (4.10.5.10.2, 4.10.5.10.3) and Onset of OMR Management (4.10.5.10.1). Genetic identification of salmon is not used in calculating loss, but results are included in the Assessment as they become available.

| Species/run | Threshold | Current Status | Weekly Trend | Updated |
| --- | --- | --- | --- | --- |
| Green sturgeon | WY 2025 salvage = 74 | WY 2025 salvage = (0%) | No change expected | 12/09/2024 |
| Natural winter-run Chinook Salmon | WY 2025 loss = TBD \*  (50% of 1.17% of JPE) | WY 2025 loss = 2.6 | No change expected | 12/10/2024 |
| Natural Steelhead | Dec 1 – Mar 31 = 707 (50% of 1,414)  Apr 1 – June 15 = 776 (50% of 1,552) | WY 2025 loss = 0  Dec 1 – Mar 31 = 0 (0%)  Apr 1 – June 15 = 0 (0%) | No change expected | 12/09/2024 |
| Sacramento River Hatchery winter-run Chinook salmon | WY 2025 loss = TBD\* (50% of 0.12% of JPE) | WY 2025 loss = 0 (0%) | No change expected | 12/09/2024 |
| Battle Creek  Hatchery winter-run Chinook salmon | WY 2025 loss = TBD \*  (50% of 0.12% of JPE) | WY 2025 loss = 0 (0%) | No change expected | 12/09/2024 |
| Proposed Action Hatchery yearling spring-run Chinook salmon surrogates | > 0.5% of each release group  Group 1 = 3,494 (698,892 \* 0.5%) | WY 2025 loss = 732.16 ( 21%)\* | Salvage likely to continue | 12/10/2024 |
| 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.  Flow = 16,874.67 cfs  Turbidity = 12.30 FNU | Flow and turbidity expected to decrease | 12/10/2024 |
| Delta Smelt | Daily avg. Turbidity at OBI=>12 FNU | OBI Daily Average = Not relevant | Not relevant | 10/28/2024 |
| Delta Smelt | Daily avg. Temperature at CCF > 25°C for three consecutive days | CCF daily avg. Temperature = Not relevant | Not relevant | 10/28/2024 |

Table 2b. 10-Year Salmonid Cumulative Loss

| Species/run | Threshold | Current Status | Updated |
| --- | --- | --- | --- |
| Natural winter-run Chinook salmon | Loss = 8,738 | Cumulative loss =  4575.3 (52.36%) | 12/09/2024 |
| Hatchery winter-run Chinook salmon | Loss = 5,356 | Cumulative loss =  11.04 (0.21%) | 12/09/2024 |
| Natural steelhead | Loss = 6,038 (Dec 1 – Mar 31) Loss = 5,826 (Apr 1 – June 15) | Cumulative loss =  4951.27 (82%, Dec 1 – Mar 31)  2923.28 (50.2%, Apr 1 – June 15) | 12/09/2024 |

Table 3a-d: Relevant Water Year 2025 Fish Criteria and Status for Listed Fish under the SWP Long-Term Incidental Take Permit.

Table 3a: Chinook Salmon

\* No draft WR JPE for WY 2025. Final JPE letter is expected in January.

| Action | Timeframe | Current Action Status | Threshold(s) | Current Relevant Data | Weekly Trend | Last  Updated | Comments |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Onset of OMR Management (8.3) | Jan. 1 - Jun. 30 | Not in effect | Begins January 1 or earlier if COA 8.3.1, COA 8.3.2, or COA 8.3.3 are in effect (see Table 3b) | N/A | N/A | 11/12/24 | N/A |
| Winter-run Annual Loss  (8.4.3) | July 1 - Jun. 30 | In effect | -Natural-origin Winter-run Loss Threshold: 0.5% of JPE  -Hatchery-origin Winter-run Loss Threshold: 0.12% of JPE | TBD (based on JPE) | N/A | 11/12/24 | N/A |
| 2024 Winter-run Early Season Natural-origin Discrete Daily Loss (8.17) | Nov. 1 - Dec. 20 (or when ROD is signed) | In effect | 12/1-12/31: loss of 26/day unclipped older juv. Chinook Salmon | Max daily Loss of 13.00 occurred on 12/4 and 12/5. | Likely to see more salvage | 12/9/24 | No older juvenile resulted to Winter run after genetical analysis yet. |
| Natural-origin Winter-run Early Season Weekly Loss Thresholds  (8.2.1) | Nov. 1- Dec. 31 | Not in Effect | N/A | N/A | N/A | 11/12/24 | Begins when ROD is signed or Dec. 21 |
| Natural-origin Winter-run Weekly Loss (8.4.4) | Jan 1 – June 30 | Not in effect | Thresholds based on Table 4, Column E of 2024 SWP ITP:  [50% of Annual Loss Threshold x Winter-run in Delta (based on Column E)] | January 1-January 7 Threshold: TBD (based on JPE) | N/A | 11/12/24 | N/A |
| Spring-run Protection Action and Surrogate Annual Loss  (8.4.5) | Natural-origin: Oct. – June 30  Hatchery-origin: Nov. 1 – June 30 | Natural- origin~~:~~ In effect  Hatchery-origin:  first surrogate release | **1,747.23** (0.25% of 698,892 fish released) | Current loss for this hatchery-origin spring run group is 732.16 (42% of the loss threshold) | Likely to see more salvage | 12/10/24 | No natural origin Chinook salmon has been salvaged yet for WY 25  The first loss from this group has occurred on 11/29/24 at CVP. |

Table 3b: Delta Smelt

| Action | Timeframe | Current Action Status | Threshold(s) | Current Relevant Data | Weekly Trend | Last Updated | Comments |
| --- | --- | --- | --- | --- | --- | --- | --- |
| First Flush Action (8.3.1) | Dec. 1 – last day of February | Active | - three-day Freeport daily flow running avg>= 25,000 AND  [three-day Freeport turbidity running avg >=50 NTU OR Smelt Monitoring Team recommendation] | Freeport 3-day avg.  Flow = 16,874.67 cfs  Turbidity = 12.3 FNU | Flow and turbidity expected to decrease | 12/10/24 | Data from 12/9/24 |
| Adult Delta Smelt Entrainment Protection (“Turbidity Bridge Avoidance”) (8.3.2) | Dec. 20 -  temps at Jersey Point or Rio Vista reaching 53.6 F | Not active | Occurs after the Integrated Early Winter Pulse protection or December 20 (whichever comes first) until 3-day average temperature offramp at JP or RV > 53.6 F  -OBI, OSJ, and HOL turbidity>12 FNU | OBI Turbidity: Not relevant  3-d JP temp:  3-d RV temp: | Not relevant |  |  |
| Larval andJuvenile Delta smelt Protection (8.4.1) | ongoing | Not active | - If 3-d temp at Jersey Point or Rio Vista >= 12C, and SLS/20mm Secchi for 12 south delta stations <= 1m, then –3500 OMR | Current 5-day salvage = Not relevant  3-day SJJ temp = Not relevant  Secchi = Not relevant | Not relevant |  | N/A |

Table 3c: Longfin Smelt

| Action | Timeframe | Current Action Status | Threshold(s) | Current Relevant Data | Weekly Trend | Last Updated | Comments |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Adult LFS Protection (8.3.3) | Dec. 1 - Feb. 28/29 | Active | -Cum. salvage > (Age 1+ LFS Index/20)+1 = 42 fish (Aug.-Oct. Bay Study Index) | Cum salvage total = 0 | No change expected | 12/3/24 |  |
| Larval and Juvenile Longfin Smelt Entrainment Protection (8.4.2) | Jan 1 – Jun 30 | Not Active | -7-d avg QWEST < +1,500 cfs, AND LFS larvae or juveniles in most recent SLS or 20 mm survey at 809 & 812 > catch threshold; OR cumulative salvage > 75% avg annual salvage 2009-present |  |  |  |  |
| High Flow OMR Off-Ramp for Longfin Smelt (8.4.2) | Based on the status of 8.3.3, 8.4.1, & 8.4.2 | Not Active | -Sac. R. at Rio Vista>55,000, OR  SJR at Vernalis >8,000 | Rio Vista = 9,000-15,000 cfs  SJ = 1,000 to 2,000 cfs | N/A | 12/9/24 | N/A |

Table 3d: OMR

| Action | Timeframe | Current Action Status | Threshold(s) | Current Relevant Data | Weekly Trend | Last Updated | Comments |
| --- | --- | --- | --- | --- | --- | --- | --- |
| OMR Storm Flex (8.5) | Start of OMR – Onramp of Larval and Juvenile DS Protection Action (8.4.1) or last day of February (whichever occurs first) | Not in Effect | -Delta is in excess  -QWEST is > +1,500 cfs  -X2 is < 81 km  - Daily average turbidity at OSJ, HOL, and OBI are <12 FNU  -Higher level of outflow available for diversion due to storm flows  -Measurable amount of precipitation has occurred  -None of COA’s are controlling operations (8.2.1, 8.3.2, 8.3.3,, 8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.7)  -Cumulative loss at CVP and SWP of yearling CNFH LFR Chinook salmon (as yearling CHNSR surrogates) is < 0.5% with any of the release groups | N/A | N/A | 11/12/24 | Based on storm conditions |
| End of OMR  Management  (8.6) | Jun. 1 – Jun. 30 | Not in effect | Smelt:  -Daily mean water temperature at CCF is > or equal to 25 C for 3 consecutive days  Salmonids:  -Current daily average water temperature is > 22.2 C at Mossdale and Prisoners Point for 7 days (can be non-consecutive). | N/A | N/A | 11/12/24 | N/A |

Table 4: Fish monitoring gear efficiency and disruptions. Status Categories: [1] Active (ongoing sampling), [2] Partial Interruption (some sampling interruptions), [3] Interrupted (sampling fully suspended), [4] Not Active (sampling not scheduled)

| Monitoring survey | Region | Notes (as of 12/10/2024) | Status |
| --- | --- | --- | --- |
| SWP regular counts, CWT reading | Delta | Active | 1 |
| SWP larval sampling | Delta | Not Active | 4 |
| CVP regular counts, CWT reading | Delta | Active | 1 |
| CVP larval sampling | Delta | Not Active | 4 |
| Smelt Larval Survey | Delta | Active | 1 |
| LEPS | Delta | Not Active | 4 |
| 20mm Survey | Delta | Not Active | 4 |
| Fall Mid-water Trawl | Delta | Active | 1 |
| Summer Townet Survey | Delta | Not Active | 4 |
| Bay Study | Delta | Active | 1 |
| DJFMP- Chipps and Sacramento Trawls | Delta | Active | 1 |
| DJFMP- Seines | Delta | Active | 1 |
| EDSM | Delta | Active | 1 |
| EMP | Delta | Active | 1 |
| Mossdale | Delta | Active | 1 |
| USGS Flow monitoring | Delta | Active | 1 |
| Red Bluff Diversion Dam Rotary Screw Trap (RST) | Sacramento River | Active | 1 |
| Knights Landing RST | Sacramento River | Active | 1 |
| Tisdale RST | Sacramento River | Active | 1 |
| GCID RST | Sacramento River | Not Active | 4 |
| Yuba River (Hallwood) RST | Yuba River | Active | 1 |
| Butte Creek Carcass Surveys | Butte Creek | Active | 1 |
| Butte Creek RST | Butte Creek | Active | 1 |
| Redd dewatering and stranding surveys | Sacramento River | Active | 1 |
| Sacramento Carcass and Redd Surveys | Sacramento River | Active | 1 |
| Lower Sacramento RST | Sacramento River | Active | 1 |
| Feather River (upper DWR) RST | Sacramento River | Active (1 trap) | 1 |
| Feather River (lower CDFW) RST | Sacramento River | Active | 4 |
| Feather River Carcass Survey | Sacramento River | Active | 1 |
| SJRRP CDFW Field Monitoring | San Joaquin River | Active | 1 |
| SJRRP USFWS and USBR Field Monitoring | San Joaquin River | Active | 1 |
| Stanislaus Fish Weir | San Joaquin River | Active | 1 |
| Stanislaus River Carcass Survey | San Joaquin River | Active | 1 |
| American River Carcass Survey | Sacramento River | Active | 1 |

Preference (i.e., a y-intercept of 0.5)