# Weekly Fish and Water Operations Outlook

12/17/2024 – 12/23/2024

## 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 However, the controlling factor will be “First Flush” operational constraints beginning on 12/19/24 through 1/1/25.

## Biological Context

A “First Flush” action was “triggered” based on flows and turbidity at Freeport on 12/16/24.

## Forecasted Weather

Light precipitation occurs Monday into early Tuesday, followed by drier weather into late week. A shift back toward more unsettled weather is possible by the weekend, but uncertain at this time.

## 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 eggs incubating and juveniles are emerging. * Late Fall run Chinook adults are migrating into Clear Creek and spawning * Spring-run Chinook Salmon juveniles are rearing and emigrating. * O. mykiss adults are migrating and spawning. * (Updated 12/11/2024) |
| Sacramento River | * Shasta Storage: 2.878 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: 1.98 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 emerging and are migrating downstream. * Fall-run Chinook spawning is complete. Juveniles emerging and migrating downstream. * Adult O. mykiss present and migrating upstream. * (Updated 12/17/2024) |
| American River | * Folsom Storage: 308 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: 1.830 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: 18,000 to 46,000 cfs * Vernalis: 1,000 to 2,000 cfs * Delta Outflow index: 20,000 to 50,000 cfs * Combined Exports: 2,100 to 10,900 cfs * JPP: 1,600 cfs to 3,600 cfs * CCF: 500 cfs to 7,300 cfs * Expected Daily OMR Index Values: -2,000 to -10,000 cfs * DCC Gates: Closed on 11/18. * X2 > 81 km * Tides: Transition from Spring to Neap. | * 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, the lower Sacramento River, Cache Slough, and the Sacramento Deepwater Shipping Channel. * 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. One marked adult Delta smelt from the 12/9/24 release was detected at Cache Slough on 12/12/24. * One marked adult Delta smelt was detected in salvage at TFCF on 12/17/24. * 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, the Lower Sacramento River, and at Chipps Island. * Adult longfin smelt have been detected in Suisun Marsh, Grizzly Bay, and Chipps Island. * (Updated 12/17/2024) |

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 | 12/17/2024 |
| Natural winter-run Chinook Salmon | WY 2025 loss = TBD \*  (50% of 1.17% of JPE) | WY 2025 loss = 2.6 | No change expected | 12/17/2024 |
| 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 | 12/17/2024 |
| 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 | 12/17/2024 |
| 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 | 12/17/2024 |
| Proposed Action Hatchery yearling spring-run Chinook salmon surrogates | > 0.5% of each release group  Group 1 = 3,494 (698,892 \* 0.5%)  Group 2 =  **386.8**  (77,355 \* 0.5%) | WY 2025 loss =  Group 1: 877.93 (25%)\* | Salvage likely to continue | 12/17/2024 |
| 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 = 28,955.67 cfs  Turbidity = 54.26 FNU | Flow and turbidity expected to be variable | 12/17/2024 |
| Delta Smelt | Daily avg. Turbidity at OBI=>12 FNU  See Table 3b for threshold conditions after ROD is signed | OBI Daily Average = Not relevant | Not relevant until ROD is signed | 12/17/2024 |
| 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 =  4577.9 (52.4%) | 12/17/2024 |
| Hatchery winter-run Chinook salmon | Loss = 5,356 | Cumulative loss =  11.04 (0.21%) | 12/17/2024 |
| 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) | 12/17/2024 |

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 | no Loss of unclipped older juvenile occurred  last week | Likely to see more salvage | 12/16/24 | All unclipped older juveniles have been Genetically processed and none resulted as Winter run. |
| 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 | Group 1**: 1,747.23** (0.25% of 698,892 fish released)  Group 2:  **193.39**  (0.25% of 77,355 fish released) | Current loss for this hatchery-origin spring run group is 877.93 (**50.25%** of the loss threshold) | Likely to see more salvage | 12/16/24 | No natural origin Chinook LAD spring-run salmon has been salvaged yet for WY 25.  The second group was released on 12/13/24. No loss from this group has occurred yet. |

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, Triggered on Dec. 16  Action active from Dec. 19 through Jan 1, 2025 | - 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 = 28,955.67 cfs  Turbidity = 54.26 FNU | Flow and turbidity expected to be variable | 12/17/24 |  |
| Adult Delta Smelt Entrainment Protection (“Turbidity Bridge Avoidance”) (8.3.2) | Dec. 20 -  temps at Jersey Point or Rio Vista reaching 12 °C (53.6 °F) | Active Dec. 20 | Occurs after the Integrated Early Winter Pulse protection or December 20 (whichever comes first) until 3-day average temperature offramp at Jersey Point (SJJ) or Rio Vista (RVB) > 12 °C (53.6 °F)  -OBI, OSJ, and HOL turbidity>12 FNU | OBI Turbidity: 7.94 FNU  OSJ Turbidity: 13.43 FNU  HOL Turbidity: 8.78 FNU  3-d SJJ temp: 10.69 °C  3-d RVB temp: 10.39 °C | Turbidity variable | 12/17/24 |  |
| Larval and Juvenile 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 = 15,000-32,000 cfs  SJ = 1,000 to 2,000 cfs | N/A | 12/16/24 | 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 12/17/2024) | 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 (Inactive from 12/14-12/16) | 1 |
| Tisdale RST | Sacramento River | Active | 1 |
| GCID RST | Sacramento River | Not Active | 4 |
| Mill Creek RST | Mill Creek | Active | 1 |
| Deer Creek RST | Deer Creek | Inactive | 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 |
| 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)