Weekly Fish and Water Operations Outlook 11/21/2023 – 11/27/2023

Water Project Operational Intent for Week

* Monthly Delta Outflow and Rio Vista flow for November greater than 4,500 cfs; E/I ratio not to exceed 0.65.

Forecasted Weather

* Gusty winds on Monday; dry and warmer expected through rest of week.

Tables

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

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| --- | --- | --- |
| 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 spawning is ongoing and their eggs are incubating in the gravel. * Late fall-run Chinook salmon will soon be migrating into the creek. * Spring-run Chinook salmon eggs are incubating in the gravel (very few redds this year). * Adult *O. mykiss* are migrating into the creek and juveniles are rearing.   (*Updated 11/13/2023*) |
| Sacramento River | * Shasta Storage: 3.107 MAF * Current Release: 5,000 cfs * Anticipated Weekly Range of Releases: 5,000 cfs. | * Adult fall-run Chinook salmon are finishing migrating into tributaries, and spawning. * Fall-run and spring-run Chinook salmon redd surveys are being conducted. Shallow redds for both spring-run and fall-run Chinook salmon are being monitored. * Late-fall run Chinook adults are moving upstream and holding in the river awaiting spawning in Dec-Jan. * Winter-run fry are migrating downstream past RBDD, although some will remain rearing upstream of Red Bluff as late as March. * Length-at-date spring-run fry are being captured at RBDD, and genetic analysis, conducted for run assignment. * *O.* *mykiss* juveniles are rearing. * Adult green sturgeon are holding. * Green sturgeon juveniles are rearing.   *(Updated 11/20/2023)* |
| Feather River | * Oroville Storage: 2.347 MAF * Current Release: 1,750 cfs * Anticipated Weekly Range of Releases: 1,750 cfs. | * Fall-run Chinook salmon adult spawning has begun. Redds are being observed in both the HFC and LFC. * Fall-run Chinook salmon peak spawning is estimated to have concluded; however, spawning is still ongoing and redd/carcass surveys will continue through December. * *O. mykiss* juveniles are rearing.  Adults are migrating upstream. * Adult green sturgeon are still holding in the Low Flow Channel. * Spring-run Chinook salmon adults have likely completed spawning.   (*Updated 11/20/2023*) |
| American River | * Folsom Storage: 506 TAF * Current Release: 2,000 cfs * Anticipated Weekly Range of Releases:  2,000 cfs | * *O. mykiss* juveniles are rearing. * Adult fall-run Chinook salmon are migrating upstream and have begun spawning.   (*Updated 11/7/2023*) |
| Stanislaus River | * New Melones Storage: 1.911 MAF * Current Release: 200 cfs * Anticipated Weekly Range of Releases: 200 cfs | * *O. mykiss* - Adult and juveniles present * Fall-run Chinook salmon adults are migrating upstream and actively spawning. * Fall-run Chinook salmon adult observations are low this year compared to other years, with only 1,766 fall-run Chinook salmon passing through the Stanislaus Weir. * Fish rescues were conducted on 11/2/23 in Honolulu Bar due to stranding of juvenile Chinook, juvenile *O. mykiss* and adult Chinook.   (*Updated 11/20/2023*) |
| Delta | * Freeport: 7,500 to 10,500 cfs * Vernalis: 1,250 to 1,750 cfs * Delta Outflow index: 4,000 to 5,000 cfs * Combined Exports: 2,600 to 6,700 cfs * JPP: Current 1,800 cfs, Range 1,800 cfs to 2,700 cfs * CCF: Current 1,500 cfs,  Range 800 cfs to 4,000 cfs * Expected Daily OMR Index Values: -1,000 cfs to   -6,000 cfs   * DCC Gates: Closing on 11/20 and opening on 11/22 * X2 is greater than 81 km * Tides: No update provided | * Adult O. mykiss present * Adult and juvenile Green Sturgeon present * Delta Smelt sub-adults and adults are present in the lower Sacramento River. * Longfin Smelt sub-adults and adults have been detected in Suisun Marsh and Bay, Grizzly Bay, San Pablo Bay, and at Chipps Island. Sub-adult LFS have also been detected at the Confluence and Lower Sacramento River.   (*Updated 11/21/2023*) |

Table 2a-b: WY 2024 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 2024 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. \* TBD – no draft JPE produced, ITL and performance thresholds are TBD currently

| Species/run | Threshold | Current Status | Weekly Trend | Updated |
| --- | --- | --- | --- | --- |
| Green sturgeon | WY 2024 salvage = 74 | WY 2024 salvage = 0 (0%) | No change expected | 11/20/2023 |
| Natural winter-run Chinook Salmon | WY 2024 loss = TBD\*  (50% of 1.17% of JPE) | WY 2024 loss = 0 (0%) | No change expected | 11/20/2023 |
| Natural Steelhead | Dec 1 – Mar 31 =  707; (50% of 1,414)  Apr 1 – June 15 = 776 (50% of 1,552) | WY 2024 loss = 0.68  Dec 1 – Mar 31 = 0.68 (0.096 % of the 50% threshold)  Apr 1 – June 15 = 0(0% of the 50% threshold) | No change expected | 11/20/2023 |
| Sacramento River Hatchery winter-run Chinook salmon | WY 2024 loss = TBD\* (50% of 0.12% of JPE) | WY 2024 loss = 0 (0%) | No change expected | 11/20/2023 |
| Battle Creek  Hatchery winter-run Chinook salmon | WY 2024 loss = TBD\* (1% of JPE) | WY 2024 loss = 0 (0%) | No change expected | 11/20/2023 |
| Proposed Action Hatchery yearling spring-run Chinook salmon surrogates | > 0.5% of each release group | WY 2024 loss = 0 (0%) | No change expected | 11/20/2023 |
| 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 = Not relevant  Turbidity = Not relevant | Not relevant | 10/16/2023 |
| Delta Smelt | Daily avg. Turbidity at OBI=>12 FNU | OBI Daily Average = Not relevant | Not relevant | 11/20/2023 |
| Delta Smelt | Daily avg. Temperature at CCF > 25°C for three consecutive days | CCF daily avg. Temperature = Not relevant | Not relevant | 11/20/2023 |

Table 2b. 10-Year Salmonid Cumulative Loss

| Species/run | Threshold | Current Status | Updated |
| --- | --- | --- | --- |
| Natural winter-run Chinook salmon | Loss = 8,738 | Cumulative loss =  368.95 (4.2%) | 11/20/2023 |
| Hatchery winter-run Chinook salmon | Loss = 5,356 | Cumulative loss =  6.71 (0.13%) | 11/20/2023 |
| Natural steelhead | Loss = 6,038 (Dec 1 – Mar 31) Loss = 5,826 (Apr 1 – June 15) | Cumulative loss =  1576.53 (26.1%, Dec 1 – Mar 31)  976.75(16.8%, Apr 1 – June 15) | 11/20/2023 |

Table 3a: Relevant Water Year 2024 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)* | Not in effect | -5% of the  Winter-run or Spring-run population in  Delta | N/A | N/A | 9/29/23 | Will be updated when in effect. |
| Winter-run yearly loss  (8.6.1) | Nov. 1 - Jun. 30 | In effect | TBD (based on WY 2023 JPE) | N/A | N/A | 11/13/23 |  |
| 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 | Max WR discrete daily loss observed last week = 0 | N/A | 11/21/23 | Unclipped WR have not been yet salvaged at SWP/CVP since the season started. |
| Mid and late season Winter-run daily loss threshold (8.6.3) | Jan 1 – May 31 | Not In effect | TBD | N/A | N/A | 9/29/23 | Will be updated when in effect. |
| Spring-run surrogate protection  (8.6.4) | Feb. 1 - Jun. 30 | Not in effect | TBD |  | N/A | 9/29/23 | Will be updated when in effect |

Table 3b: Delta Smelt

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| --- | --- | --- | --- | --- | --- | --- | --- |
| 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 | Not 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] | N/A | N/A | 11/20/23 | N/A |
| 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 FNU | N/A | N/A | 11/20/23 | N/A |
| Larval and/Juvenile Delta smelt Protection (8.5.2) | Nov. 1 – Jun. 30 | In effect, not triggered | - If 5-day cum. salvage of juv.DS>= 1 [average 3- yrFMWT index + 1], then –5000 OMR  - If DS in SLS/20mm or 3-d temp at Jersey Point >= 12C, and SLS/20mm Secchi for 12 south delta stations <= 1m, then –3500 OMR | Current 5-day salvage = 0  3-day SJJ temp= 15.35 °C | N/A | 11/20/23 | N/A |

Table 3c: Longfin Smelt

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| --- | --- | --- | --- | --- | --- | --- | --- |
| 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 | Not in effect | -Cum. salvage > [most recent FMWT/10] =1 fish (Sept.-Oct. Index) OR  -Smelt Monitoring Team determines high likelihood of LFS movement into high-risk areas | N/A | N/A | 11/20/23 | N/A |
| OMR Mgt. for Adults (8.4.1) | Dec. 1 -Feb. 28 | Not in effect | -Smelt Monitoring Team recommendation | N/A | N/A | 11/20/23 | N/A |
| Larval and Juvenile Longfin Smelt Entrainment Protection (8.4.2) | Jan 1 – Jun 30 | Not in effect | -LFS larvae or juveniles in >=4 SLS or 20 mm stations in central and south Delta, OR  -LFS catch/tow >5 larvae or juveniles in >=2stations | N/A | N/A | 11/20/23 | N/A |
| 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, not triggered | -Sac. R. at Rio Vista>55,000, OR    SJR at Vernalis >8,000 | Rio Vista = 3,000 – 6,000 cfs  SJ = 1,250 – 1,750 cfs | N/A | 11/20/23 | 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 11/20/2023) | 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 | Not Active | 4 |
| 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 |
| 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 | Feather River | Not Active | 4 |
| Feather River (lower CDFW) RST | Feather River | Active | 1 |
| SJRRP CDFW Field Monitoring | San Joaquin River | Active | 1 |
| SJRRP USBR Field Monitoring | San Joaquin River | Active | 1 |
| Stanislaus Fish Weir | Stanislaus River | Active | 1 |
| American River Carcass/Redd Surveys | American River | Active | 1 |
| Caswell RST | Stanislaus River | Not Active | 4 |
| Wallace Weir | Cache Slough | Active | 1 |
| Butte Creek RST/Diversion Trap | Butte Creek | Active | 1 |