Weekly Fish and Water Operations Outlook 1/23/2024 – 1/29/2024

Water Project Operational Intent for Week

* Monthly Delta Outflow for January greater than 6,000 cfs; E/I ratio not to exceed 0.65. The “Integrated Early Winter Pulse Protection” action under both the Federal Bi Ops and State ITP was “triggered” on Sunday 1/21. The Projects will reduce their combined exports for 14 consecutive days so that the 14-day averaged OMRI for the period shall not be more negative than –2,000 cfs beginning Tuesday 1/23.

Forecasted Weather

* A break from the wet weather pattern over the weekend occurs on Tuesday, then a weaker system moves in Tuesday night and Wednesday bringing another round of rain and snow. Behind this system, the models forecast extended ridging and warmer temperatures from the end of this week into early next 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

|  |  |  |
| --- | --- | --- |
| Tributary/Division | Anticipated Weekly Ranges | Related Environmental and Fish Conditions |
| Clear Creek | * Current Release: 200 cfs * Anticipated Weekly Range of Releases: 200 cfs | * Spring-run Chinook salmon fry rearing. * Fall-run Chinook salmon eggs are incubating and hatching. Juveniles are emerging and rearing. * Late fall-run Chinook Salmon adults are spawning and eggs are incubating. * Adult *O. mykiss* are migrating and spawning. Their eggs are incubating and juveniles are rearing.   (*Updated 1/22/2024*) |
| Sacramento River | * Shasta Storage: 3.188 MAF * Current Release: 5,000 cfs * Anticipated Weekly Range of Releases: 5,000 cfs. | * Adult fall-run Chinook salmon spawning is complete. Late fall-run Chinook adults are approaching peak spawning and some are still holding. * Fall-run redds are in various stages. Some eggs are still incubating, while others have emerged and fry are beginning to migrate downstream. * Late-fall run Chinook eggs are currently incubating in gravel.   *(Updated 1/22/2024)* |
| Feather River | * Oroville Storage: 2.538 MAF * Current Release: 1,750 cfs * Anticipated Weekly Range of Releases: 1,750 cfs. | * Fall-run Chinook salmon adult spawning has ended. Redds are being observed in both the HFC and LFC. Eggs are incubating in gravel. Fry are beginning to emerge and migrate downstream. * *O. mykiss* juveniles are rearing.  Adults are migrating upstream. * Adult green sturgeon are still holding in the LFC. * Spring-run Chinook salmon adults have completed spawning.  Eggs are incubating in gravel. Fry are emerging and migrating downstream.   (*Updated 1/22/2024*) |
| American River | * Folsom Storage: 483 TAF * Current Release: 1,750 cfs * Anticipated Weekly Range of Releases:  1,750 cfs | * *O. mykiss* juveniles are rearing. * Adult fall-run Chinook salmon are spawning is nearing an end. Eggs are incubating in gravel. * Fry are beginning to emerge.   (*Updated 1/22/2024*) |
| Stanislaus River | * New Melones Storage: 1.983 MAF * Current Release: 1,000 cfs * Anticipated Weekly Range of Releases: 1,000 cfs | * *O. mykiss* - Adult and juveniles present * Fall-run Chinook salmon spawning is nearing an end. Eggs are incubating in gravel.   (*Updated 1/22/2024*) |
| Delta | * Freeport: 35,000 to 40,000 cfs * Vernalis: 2,000 to 5,500 cfs * Delta Outflow index: 30,000 to 55,000 cfs * Combined Exports: 3,000 to 5,000 cfs * JPP: Current 3,600 cfs, Range 1,800 cfs to 3,600 cfs * CCF: Current 300 cfs, Range 300 cfs to 2,000 cfs * Expected Daily OMR Index Values: -1,500 cfs to   -2,500 cfs   * DCC Gates: Closed on 11/27 for season * X2 is approx. 74 km * Tides: Transitioning from Neap to Spring tide, full moon 1/25 | * Juvenile and adult O. mykiss present * Juvenile Chinook Salmon present * Adult and juvenile Green Sturgeon present * Delta Smelt sub-adults and adults (size-based) are present in the lower Sacramento River and Suisun Marsh. They are expected to begin their population-level, upstream spawning migration in response to high flow and turbidity (i.e., “first flush”) conditions. * Longfin Smelt sub-adults and adults have been detected in Suisun Marsh and Bay, Grizzly Bay, San Pablo Bay, Chipps Island, and at the Confluence and Lower Sacramento River. Longfin Smelt larvae have been detected in the Lower San Joaquin River, Suisun Marsh, the Confluence, and the Lower Sacramento River. LFS population scale migration and spawning is ongoing.   (*Updated 1/22/2024*) |

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. The Final WR JPE for BY 2023 is 234,896. The ITL and performance thresholds are TBD.

| Species/run | Threshold | Current Status | Weekly Trend | Updated |
| --- | --- | --- | --- | --- |
| Green sturgeon | WY 2024 salvage = 74 | WY 2024 salvage = 0 (0%) | No change expected | 1/22/2024 |
| Natural winter-run Chinook Salmon | WY 2024 loss = 1374  (50% of 1.17% of JPE) | WY 2024 loss =  30.29 (2.2%) | Increasing | 1/22/2024 |
| Natural Steelhead | Dec 1 – Mar 31 =  707; (50% of 1,414)  Apr 1 – June 15 = 776 (50% of 1,552) | WY 2024 loss = 60.48  Dec 1 – Mar 31 = 60.48 (8.55 % of the 50% threshold)  Apr 1 – June 15 = 0 (0% of the 50% threshold) | Increasing | 1/22/2024 |
| Sacramento River Hatchery winter-run Chinook salmon | WY 2024 loss = 140.93 (50% of 0.12% of JPE) | WY 2024 loss = 0 (0%) | Increasing | 1/22/2024 |
| Battle Creek  Hatchery winter-run Chinook salmon | WY 2024 loss = 234.90 (1% of JPE) | WY 2024 loss = 0 (0%) | No change expected | 1/22/2024 |
| Proposed Action Hatchery yearling spring-run Chinook salmon surrogates | > 0.5% of each release group  1) 12/22/2023 group 1:  60,764 =   303.82  2) 12/29/2023 group 2:  71,049 = 355.25  3) 1/11/2024 group 3:  67,018 = 335.09 | WY 2024 loss =  1) 24.53 (8.1%)  2) 12.98 (3.7%)  3) 0 (0%) | Increasing | 1/22/2024 |
| Delta Smelt | After Dec. 1:  Running 3-day avg. flows at Freeport >25,000 cfs AND  Running 3-day avg. turbidity at Freeport =>50 FNU | Triggered 1/21/2024 with  Freeport 3-day avg.  Flow = 25177 cfs;  Turbidity = 53.9 FNU | Increase this week | 1/22/2024 |
| Delta Smelt | Daily avg. Turbidity at OBI=>12 FNU | OBI Daily Average = 3.11 FNU |  | 11/22/2024 |
| Delta Smelt | Daily avg. Temperature at CCF > 25°C for three consecutive days | CCF daily avg. Temperature = Not relevant | Not relevant | 11/27/2023 |

Table 2b. 10-Year Salmonid Cumulative Loss

| Species/run | Threshold | Current Status | Updated |
| --- | --- | --- | --- |
| Natural winter-run Chinook salmon | Loss = 8,738 | Cumulative loss =  400.54(4.58%) | 1/22/2024 |
| Hatchery winter-run Chinook salmon | Loss = 5,356 | Cumulative loss =  6.71 (0.13%) | 1/22/2024 |
| Natural steelhead | Loss = 6,038 (Dec 1 – Mar 31) Loss = 5,826 (Apr 1 – June 15) | Cumulative loss =  1636.94 (27.1%, Dec 1 – Mar 31)  1012.50(17.4%, Apr 1 – June 15) | 1/22/2024 |

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)* | **In effect** | 5% of the  Winter-run or Spring-run population in  Delta | N/A | N/A | 1/8/2024 | In effect as of January 1. |
| **Winter-run yearly loss**  **(8.6.1)** | Nov. 1 - Jun. 30 | **In effect** | 2,748.28 (1.17% of Natural LAD WR of Final JPE)  232.30 (0.12% of LSNFH of Final JPE) | Loss of total LAD Winter-run = 34.62 | Salvage is likely to occur in the upcoming week | 1/23/23 | Natural-origin LAD winter-run Chinook salmon (WR) were observed in salvage the previous week. |
| Winter-run discrete daily loss (8.6.2) | Nov. 1 - Dec. 31 | Not in effect | 26 older juvenile/day | Max Older Juvenile discrete daily loss observed last week = N/A | N/A | 1/22/2024 | N/A |
| **Mid and late season Winter-run daily loss threshold (8.6.3)** | Jan 1 – May 31 | **In effect** | 1/1-1/31: loss of 2.91 fish /day of natural-origin LAD older juvenile  (Winter-run, Yearling fall-run, and Late fall-run). Updated with genetic results as they become available. If genetics confirms that the older juvenile is NOT a WR then that fish will not count towards the threshold. | Max daily Loss of older juvenile Chinook occurred on 1/15 with loss of 5.76. | Salvage of older juveniles is likely in the upcoming week. | 1/22/2024 | Older juveniles were salvaged at both fish facilities the previous week. A genetically-confirmed WR was observed in salvage on 1/16/24 which triggered COA 8.6.3. |
| Spring-run surrogate protection  (8.6.4) | Feb. 1 - Jun. 30 | Not in effect | TBD | N/A | N/A | 9/29/23 | Will be updated when in effect |

Table 3b: Delta Smelt

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 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 | 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] | Triggered on 1/21/2024 with Freeport 3-day avg.  Flow = 25,177 cfs;  Turbidity = 53.9 FNU | Flows expected to increase this week | 1/22/24 | 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 comes first until April 1  -avg. OBI turbidity>12 FNU | OBI daily average = 3.11 FNU |  | 11/22/24 | 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-yr FMWT 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= 11.05 °C  Average Secchi Depth = 118cm (as of 1/22) | N/A | 1/9/24 | N/A |

Table 3c: Longfin Smelt

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 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 | Off-ramped | -Cum. salvage > [most recent FMWT/10] = 46 fish (Sept.-Dec. Index) OR  -Smelt Monitoring Team determines high likelihood of LFS movement into high-risk areas | Cumulative salvage = 0 | N/A | 12/26/23 | N/A |
| OMR Mgt. for Adults (8.4.1) | Onset of OMR mgmt -Feb. 28 | Off-ramped | -Smelt Monitoring Team recommendation | N/A | N/A | 12/19/23 | N/A |
| Larval and Juvenile Longfin Smelt Entrainment Protection (8.4.2) | Jan 1 – Jun 30 | Triggered | -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 | SLS 1 detected five larvae at 809, 812, 815, and 901 on 1/10/24 | N/A | 1/23/24 | SWP is restricted to an OMRI of –5,000 on a 7-day average when the 3-day average of QWest is more positive than +3,000. |
| 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 = 20,000 – 40,000 – cfs  SJ = 2,000 – 5,500 cfs | N/A | 1/22/24 | 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 1/22/2024) | Status |
| --- | --- | --- | --- |
| SWP regular counts, CWT reading | Delta | Active | 1 |
| SWP larval sampling | Delta | Not Active | 4 |
| CVP regular counts, CWT reading | Delta | Partially interrupted (1/24) | 2 |
| CVP larval sampling | Delta | Not Active | 4 |
| Smelt Larval Survey | Delta | Active | 1 |
| LEPS | Delta | Active | 1 |
| 20mm Survey | Delta | Not Active | 4 |
| Fall Mid-water Trawl | Delta | Not Active | 4 |
| 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 Trawl | 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 |
| Yuba River (Hallwood) RST | Yuba River | Active | 1 |
| Redd dewatering and stranding surveys | Sacramento River | Active | 1 |
| Sacramento Carcass and Redd Surveys (Late fall-run Chinook salmon) | Sacramento River | Active | 1 |
| Lower Sacramento RST | Sacramento River | Partially Interrupted (Inactive due to high flows from 1/14/24-1/15/24) | 2 |
| Feather River (upper DWR) RST | Feather River | Active | 1 |
| 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 (Fall-run Chinook salmon) | American River | Active | 1 |
| Stanislaus Carcass Survey (Steelhead/Fall-run Chinook salmon) | Stanislaus River | Active | 1 |
| Caswell RST | Stanislaus River | Active | 1 |
| Wallace Weir | Cache Slough | Active | 1 |
| Butte Creek RST/Diversion Trap | Butte Creek | Active | 1 |