BUREAU OF RECLAMATION

# Weekly Fish and Water Operations Outlook 1/2/2024 – 1/8/2024

## Water Project Operational Intent for Week

- Monthly Delta Outflow for January greater than 4,500 cfs; E/I ratio not to exceed 0.65; OMR flow is less negative than or equal to –5,000 cfs.

## Forecasted Weather

- Dry with increasing chances for rain this afternoon and evening; dry weather returns Wednesday through Friday; wet weather returns into weekend.

## 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<br>• Anticipated Weekly Range of Releases: 200 cfs | • Spring-run Chinook salmon fry are emerging and rearing.<br>• Fall-run Chinook salmon eggs are incubating.<br>• Late fall-run Chinook Salmon adults are migrating and will soon be spawning.<br>• Adult *O. mykiss* are migrating and spawning. Eggs are incubating, and juveniles are rearing.<br><br>(*Updated 12/6/2023*) |
| Sacramento River | • Shasta Storage: 3.119 MAF<br>• Current Release: 5,000 cfs<br>• Anticipated Weekly Range of Releases: 5,000 cfs. | • Adult fall-run Chinook salmon spawning has likely completed. Late fall-run Chinook adults are now starting to spawn as well as continuing to migrate and hold prior to spawning. |

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| | | • Fall-run redds are in various stages with the earliest redds nearing emergence, while later ones have eggs incubating in the gravel.<br>• Juvenile fall run (yolk-sac fry and fry) are being captured in low numbers at RBDD<br>*(Updated 12/18/2023)* |
| Feather River | • Oroville Storage: 2.407 MAF<br>• Current Release: 1,750 cfs<br>• 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.<br>• *O. mykiss* juveniles are rearing. Adults are migrating upstream.<br>• Adult green sturgeon are still holding in the LFC.<br>• Spring-run Chinook salmon adults have completed spawning. Eggs are incubating in gravel. Fry are beginning to emerge and migrate downstream.<br>(*Updated 1/2/2024*) |
| American River | • Folsom Storage: 465 TAF<br>• Current Release: 2,000 cfs<br>• Anticipated Weekly Range of Releases: 2,000 cfs | • *O. mykiss* juveniles are rearing.<br>• Adult fall-run Chinook salmon are spawning. Eggs are incubating in gravel.<br>• Fry are beginning to emerge.<br>(*Updated 12/19/2023*) |
| Stanislaus River | • New Melones Storage: 1.983 MAF<br>• Current Release: 200 cfs<br>• Anticipated Weekly Range of Releases: 200 cfs | • *O. mykiss* - Adult and juveniles present<br>• Fall-run Chinook salmon adults are spawning. Eggs are incubating in gravel.<br>(*Updated 12/4/2023*) |
| Delta | • Freeport: 13,000 to 25,000 cfs<br>• Vernalis: 1,000 to 1,750 cfs<br>• Delta Outflow index: 11,000 to 24,000 cfs<br>• Combined Exports: 5,100 to 7,200 cfs<br>• JPP: Current 3,600 cfs, Range 3,600 cfs to 4,200 cfs<br>• CCF: Current 2,300 cfs, Range 1,500 cfs to 3,000 cfs<br>• Expected Daily OMR Index Values: -4,000 cfs to -5,000 cfs<br>• DCC Gates: Closed on 11/27<br>• X2 is greater than 81 km<br>• Tides: Transitioning from spring to neap tide | • Adult *O. mykiss* present<br>• Adult and juvenile Green Sturgeon present<br>• Delta Smelt sub-adults and adults (size-based) are present in the lower Sacramento River.<br>• 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. Longfin Smelt larvae have been detected in the Lower San Joaquin River and the Lower Sacramento River. Water temperatures (<14C) are now conducive for LFS spawning. LFS population scale migration is ongoing and spawning has started.<br>(*Updated 1/2/2024*) |

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. * TBD – no draft JPE produced, 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 | 1/2/2024 |
| Natural winter-run Chinook Salmon | WY 2024 loss = TBD* (50% of 1.17% of JPE) | WY 2024 loss = 0 (0%) | No change expected | 1/2/2024 |
| Natural Steelhead | Dec 1 – Mar 31 = 707; (50% of 1,414)<br>Apr 1 – June 15 = 776 (50% of 1,552) | WY 2024 loss = 3.40<br>Dec 1 – Mar 31 = 3.40 (0.48 % of the 50% threshold)<br>Apr 1 – June 15 = 0(0% of the 50% threshold) | No change expected | 1/2/2024 |
| 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 | 1/2/2024 |
| Battle Creek Hatchery winter-run Chinook salmon | WY 2024 loss = TBD* (1% of JPE) | WY 2024 loss = 0 (0%) | No change expected | 1/2/2024 |
| Proposed Action Hatchery yearling spring-run Chinook salmon surrogates | > 0.5% of each release group | WY 2024 loss = 0 (0%) | No change expected | 1/2/2024 |
| Delta Smelt | After Dec. 1:<br>Running 3-day avg. flows at Freeport >25,000 cfs<br>AND<br>Running 3-day avg. turbidity at Freeport =>50 FNU | Freeport 3-day avg.<br>Flow = 19682.10 cfs;<br>Turbidity = 23.81 FNU | Slight increase in response to precipitation | 1/2/2024 |
| Delta Smelt | Daily avg. Turbidity at OBI=>12 FNU | OBI Daily Average = Not relevant | Not relevant | 11/27/2023 |
| 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 = 368.95 (4.2%) | 1/2/2024 |
| Hatchery winter-run Chinook salmon | Loss = 5,356 | Cumulative loss = 6.71 (0.13%) | 1/2/2024 |
| Natural steelhead | Loss = 6,038 (Dec 1 – Mar 31)<br>Loss = 5,826 (Apr 1 – June 15) | Cumulative loss = 1579.25 (26.2%, Dec 1 – Mar 31)<br>976.75(16.8%, Apr 1 – June 15) | 1/2/2024 |

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 | 1/2/2024 | In effect as of January 1. |
| Winter-run yearly loss (8.6.1) | Nov. 1 - Jun. 30 | In effect | 2,396.25 (0.0117% of interim JPE) | N/A | N/A | 12/28/23 | Will be updated if final JPE is different than interim JPE |
| 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 = 0 | Possible salvage of LAD older juveniles in the upcoming week | 1/2/2024 | No salvage of LAD older juveniles during the previous week. |
| Mid and late season Winter-run daily loss threshold (8.6.3) | Jan 1 – May 31 | In effect | 1/1-1/31: loss of 2.54 fish /day of unclipped LAD older juvenile (Winter-run, Yearling fall-run, and Late fall-run) | Loss of older juvenile Chinook occurred on 12/31 with loss of 2.88. | N/A | 1/2/2024 | In effect as of January 1. |
| 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

| Action | Timeframe | Current Action Status | Threshold(s) | Current Relevant Data | Weekly Trend | Last Updated | Comments |
|---|---|---|---|---|---|---|---|
| Integrated Early Winter Pulse Protection | Dec. 1 - Jan. 31 | In effect | - three-day Freeport daily flow running | Freeport 3-day avg. Flow = 19682.10 cfs; | Slight increase in response to precipitation | 1/2/24 | N/A |

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| ('First Flush') (8.3.1) | | | avg>= 25,000 AND<br><br>[three-day Freeport turbidity running avg >=50 FNU OR Smelt Monitoring Team recommendation ] | Turbidity = 23.81 FNU | | | |
| Turbidity Bridge Avoidance (8.5.1) | Dec. 15 -<br>Apr. 1 | Not in effect | Occurs after the Integrated Early Winter Pulse protection or February 1 whichever comes first until April 1<br>-avg. OBI turbidity>12 FNU | N/A | N/A | 11/27/23 | 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-yr FMWT index + 1], then –5000 OMR<br>- 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<br><br>3-day SJJ temp= 11.67 °C<br>Average Secchi Depth = 180 cm (as of 12/26) | N/A | 1/2/24 | 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 | In effect | -Cum. salvage > [most recent FMWT/10] = 46 fish (Sept.-Dec. Index) OR<br>-Smelt Monitoring Team determines high likelihood of LFS | Cumulative salvage = 0 | N/A | 12/26/23 | N/A |

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| | | | movement into high-risk areas | | | | |
| OMR Mgt. for Adults (8.4.1) | Onset of OMR mgmt -Feb. 28 | Offramped | -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 | In effect | -LFS larvae or juveniles in >=4 SLS or 20 mm stations in central and south Delta, OR<br><br>-LFS catch/tow >5 larvae or juveniles in >=2stations | N/A | N/A | 11/27/23 | 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<br><br>SJR at Vernalis >8,000 | Rio Vista = 12,000 – 23,000 – cfs<br><br>SJ = 1,000 – 1,750 cfs | N/A | 12/18/23 | 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 1/2/2024)** | **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 | 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 |

| Monitoring survey | Region | Notes (as of 1/2/2024) | Status |
|---|---|---|---|
| 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 | 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 | 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 |