



— BUREAU OF —
RECLAMATION

Weekly Fish and Water Operations Outlook

11/29/2022 – 12/5/2022

FORECASTED WEATHER: Light showers possible in the mountains at start of week. Cool and dry weather with near freezing morning temperatures Tuesday and Wednesday. Widespread precipitation returns Wednesday night through the weekend.

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 | <ul style="list-style-type: none"> • Current Release: 200 cfs • Anticipated Weekly Range of Releases: 200 cfs | <ul style="list-style-type: none"> • Spring-run Chinook salmon eggs are incubating in gravel. Fry are starting to emerge. • Fall-run Chinook Salmon eggs are incubating in the gravel. • Late fall-run Chinook Salmon are entering and will begin spawning soon. • O. mykiss adults are migrating and holding in Clear Creek. Last year's juvenile O. mykiss are present. <p><i>(Updated 11/29/22)</i></p> |

| Tributary/Division | Anticipated Weekly Ranges | Related Environmental and Fish Conditions |
|--------------------|---|--|
| Sacramento River | <ul style="list-style-type: none"> • Shasta Storage: 1,404 MAF • Current Release: 3,250 cfs • Anticipated Weekly Range of Releases: 3,250 cfs | <ul style="list-style-type: none"> • Spring-run Chinook salmon adults have completed spawning. Eggs are incubating in gravel. • Winter-run Chinook juvenile salmon have all emerged from redds and are migrating downstream. • Winter-run and Spring-run Chinook salmon (length-at-date) juveniles are being caught in low numbers and genetics being taken to confirm run assignment. • Fall-run Chinook salmon spawning is underway and will last into early December. Carcass surveys for fall-run are underway. Eggs are incubating in gravel. • Late fall-run Chinook Salmon are entering and will begin spawning soon. <p><i>(Updated 11/29/22)</i></p> |
| Feather River | <ul style="list-style-type: none"> • Oroville Storage: 974 TAF • Current Release: 1,400 cfs • Anticipated Weekly Range of Releases: 1,600 cfs to 950 cfs • Daily temperature maximum: 51 F at Fish Hatchery | <ul style="list-style-type: none"> • Adult Fall-run Chinook Salmon spawning is coming to an end, eggs are incubating in gravel. • Adult Spring-run Chinook Salmon spawning has ended, eggs are incubating in gravel. • Approximately 15-20 green sturgeon present from Sunset Pumps to Boyd's Pump. • Adult and juvenile O. mykiss present. <p><i>(Updated 11/29/22)</i></p> |
| American River | <ul style="list-style-type: none"> • Folsom Storage: 250 TAF • Current Release: 1,300 cfs • Anticipated Weekly Range of Releases: 1,300 cfs | <ul style="list-style-type: none"> • Adult fall-run Chinook Salmon are present and spawning. Eggs are incubating in gravel. Redd and carcass surveys are underway. • Juvenile and adult O. mykiss are present. <p><i>(Updated 11/29/22)</i></p> |
| Stanislaus River | <ul style="list-style-type: none"> • New Melones Storage: 586 TAF • Current Release: 200 cfs • Anticipated Range of Weekly Releases: 200 cfs | <ul style="list-style-type: none"> • Juvenile and adult O. mykiss are present. • Adult fall-run Chinook salmon are present and spawning. Eggs are in the gravel. <p><i>(Updated 11/29/22)</i></p> |

| Tributary/Division | Anticipated Weekly Ranges | Related Environmental and Fish Conditions |
|--------------------|---|---|
| Delta | <ul style="list-style-type: none"> • Freeport: 5,500 to 9,000 cfs • Vernalis: 400 to 800 cfs • Delta Outflow index: 3,000 to 10,000 cfs • Combined Exports: 1,200 to 2,800 cfs • JPP: 900 cfs to 1,800 cfs • CCF: 300 cfs to 1,000 cfs • Expected Daily OMR Index Values: -1,200 to -3,000 cfs • DCC Gates: Closed as of 11/28 and expected to remain closed for seasonal operation, however, adjustments could be necessary to respond to real-time salinity conditions. | <ul style="list-style-type: none"> • Adult <i>O. mykiss</i> present • Adult and juvenile Green Sturgeon present • Delta Smelt subadults and adults were detected in the Sacramento River Deepwater Shipping Channel in August, in Suisun Marsh (Grizzly Bay) in September, and in the lower Sacramento River in November. Experimental release of hatchery Delta Smelt at Rio Vista is planned to occur this week. • Longfin Smelt sub-adults have been detected in the lower Sacramento River and downstream of the confluence, including at Chipps in October and November. Adults have been detected in Suisun Bay and Suisun Marsh in November. Water temperatures are suitable for spawning. <p>(Updated 11/28/22)</p> |

Table 2a-b: WY 2023 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 2023 Salmonid Current Loss and Delta Smelt Abiotic Conditions. Additional Real-Time OMR Restrictions and Performance Objectives (4.10.5.10.2) and Onset of OMR Management (4.10.5.10.1). * TBD – no draft JPE produced, ITL and performance thresholds are TBD currently

| Species/run | Threshold | Current Status | Weekly Trend | Updated |
|--|---|---|--------------------|------------|
| Green sturgeon | WY 2023 salvage = 74 | WY 2023 salvage = 0 (0%) | No change expected | 11/28/2022 |
| Natural winter-run Chinook Salmon | WY 2023 loss = TBD * (50% of 1.17% of JPE) | WY 2023 loss = 0 | No change expected | 11/28/2022 |
| Natural Steelhead | Dec 1 – Mar 31 = 707 (50% of 1,414) Apr 1 – June 15 = 776 (50% of 1,552) | WY 2023 loss = 0 Dec 1 – Mar 31 = 0 (0%) Apr 1 – June 15 = 0 (0%) | No change expected | 11/28/2022 |
| Sacramento River Hatchery winter-run Chinook salmon | WY 2023 loss = TBD* (50% of 0.12% of JPE) | WY 2023 loss = 0 (0%) | No change expected | 11/28/2022 |
| Battle Creek Hatchery winter-run Chinook salmon | WY 2023 loss = TBD * (50% of 0.12% of JPE) | WY 2023 loss = 0 (0%) | No change expected | 11/28/2022 |
| Proposed Action Hatchery yearling spring-run Chinook salmon surrogates | > 0.5% of each release group | WY 2023 loss = 0 (0%) | No change expected | 11/28/2022 |

| Species/run | Threshold | Current Status | Weekly Trend | Updated |
|-------------|--|---|--------------|------------|
| Delta Smelt | After Dec. 1: Running 3-day avg. flows at Freeport >25,000 cfs Running 3-day avg. turbidity at Freeport =>50 FNU Daily avg. Turbidity at OBI=> 12 FNU | Freeport 3-day avg. Flow = 6034.2 CFS Turbidity = 1.65 FNU OBI daily Avg Turbidity = 2.74 FNU | Not relevant | 11/28/2022 |
| Delta Smelt | Daily avg. Turbidity at OBI=> 12 FNU | OBI daily Avg Turbidity = Not relevant | Not relevant | 11/28/2022 |
| Delta Smelt | Daily avg. Temperature at CCF > 25°C for three consecutive days | CCF daily avg. Temperature = Not relevant | Not relevant | 11/28/2022 |

Table 2b. 10-Year Salmonid Cumulative Loss

| Species/run | Threshold | Current Status | Updated |
|------------------------------------|---|---|------------|
| Natural winter-run Chinook salmon | Loss = 8,738 | Cumulative loss = 264.2 (3.0%) | 11/28/2022 |
| Hatchery winter-run Chinook salmon | Loss = 5,356 | Cumulative loss = 6.71 (0.13%) | 11/28/2022 |
| Natural steelhead | Loss = 6,038 (Dec 1 – Mar 31) Loss = 5,826 (Apr 1 – June 15) | Cumulative loss = 530.2 (8.8%, Dec 1 – Mar 31) 474.5 (8.1%, Apr 1 – June 15) | 11/28/2022 |

Table 3a-d: Relevant Water Year 2023 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 <i>(when ≥ 5% of spring-run or winter-run in Delta)</i> | Not in effect | -5% of the Winter-run or Spring-run population in Delta | N/A | N/A | 11/28/22 | N/A |
| Winter-run yearly loss (8.6.1) | Nov. 1 - Jun. 30 | In effect | TBD (based on JPE) | N/A | N/A | 11/28/22 | Based on JPE (TBD) |

| Action | Timeframe | Current Action Status | Threshold(s) | Current Relevant Data | Weekly Trend | Last Updated | Comments |
|---|------------------|-----------------------|---|-----------------------|--------------|--------------|-------------------------------------|
| 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 | N/A | N/A | 11/28/22 | Based on salvage data form 11/27/22 |
| Mid and late season Winter-run daily loss threshold (8.6.3) | Jan 1 – May 31 | Not in effect | N/A | N/A | N/A | 10/31/22 | N/A |
| Spring-run surrogate protection (8.6.4) | Feb. 1 - Jun. 30 | Not in effect | TBD (based on the number of fish released) | N/A | N/A | 10/31/22 | N/A |

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 | Not in effect | - three-day Freeport daily flow running avg > = 25,000 AND [three-day Freeport turbidity running avg > =50 NTU OR Smelt Monitoring Team recommendation] | N/A | N/A | 11/28/22 | 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 NTU | N/A | N/A | 11/28/22 | N/A |

| Action | Timeframe | Current Action Status | Threshold(s) | Current Relevant Data | Weekly Trend | Last Updated | Comments |
|--|-----------|--------------------------|--|-----------------------|--------------|--------------|----------|
| Larval and/Juvenile Delta smelt Protection (8.5.2) | ongoing | 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 ≥ 12 C, and SLS/20mm Secchi for 12 south delta stations ≤ 1 m, then -3500 OMR | N/A | N/A | 11/28/22 | N/A |

Table 3c: Longfin Smelt

| Action | Timeframe | Current Action Status | Threshold(s) | Current Relevant Data | Weekly Trend | Last Update | 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 | 11/28/22 | N/A |
| OMR Mgt. for Adults (8.4.1) | Dec. 1 -Feb. 28 | Not in effect | -Smelt Monitoring Team recommendation | N/A | N/A | 11/28/22 | 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 ≥ 2 stations | N/A | N/A | 11/28/22 | N/A |

| Action | Timeframe | Current Action Status | Threshold(s) | Current Relevant Data | Weekly Trend | Last Update | Comments |
|--|--|--------------------------|--|---|--------------|-------------|----------|
| 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 = 4,000 to 8,000 cfs SJ = 400 to 800 cfs | N/A | 11/28/22 | N/A |

Table 3d: OMR

| Action | Timeframe | Current Action Status | Threshold(s) | Current Relevant Data | Weekly Trend | Last Updated | Comments |
|-------------------------|------------------|-----------------------|--|-----------------------|--------------|--------------|----------|
| OMR Mgmt. Offramp (8.8) | Jun. 1 – Jun. 30 | Not in effect | ->95% of the Winter-run and Spring run populations have migrated past Chipps Island AND -Current daily average water temperature at Mossdale and Prisoners Point. • Days exceeded: Criteria met as of 6/16/2022 | N/A | N/A | 10/10/22 | 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 11/29/2022) | 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 |
| Spring Kodiak Trawl | 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 (sampling three days a week starting in May) | 1 |

| Monitoring survey | Region | Notes (as of 11/29/2022) | Status |
|---------------------------------------|-------------------|--|--------|
| 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 screw trap | Sacramento River | Active | 1 |
| Knights Landing screw trap | Sacramento River | Active | 1 |
| Tisdale screw trap | Sacramento River | Active | 1 |
| GCID screw trap | Sacramento River | Active | 1 |
| Yuba River (Hallwood) screw trap | Yuba River | Active – weekdays only | 1 |
| Redd dewatering and stranding surveys | Sacramento River | Not Active | 4 |
| Sacramento Carcass and Redd Surveys | Sacramento River | Active | 1 |
| Lower Sacramento Rotary Screw Trap | Sacramento River | Active (cones raised on 11/23 - 11/25) | 2 |
| Feather River (upper DWR) | Sacramento River | Active | 1 |
| Feather River (lower CDFW) | Sacramento River | Active | 1 |
| SJRRP CDFW Field Monitoring | San Joaquin River | Active | 1 |
| SJRRP USFWS and USBR Field Monitoring | San Joaquin River | Not Active | 4 |
| Stanislaus Fish Weir | San Joaquin River | Active | 1 |