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RECLAMATION

# **2023 Seasonal Habitat Restoration Report**

**Long-Term Operations of the Central Valley Project  
and State Water Project, California**

**California-Great Basin Region**

## **Mission Statements**

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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**Long-Term Operations of the Central Valley  
Project and State Water Project, California**

**California-Great Basin Region**

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## **Purpose**

The purpose of the 2023 Seasonal Habitat Restoration Report (Report) is to provide an annual status update to the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) on the progress of habitat restoration conservation measures defined in the U.S. Bureau of Reclamation's (Reclamation) 2019 proposed action for the Long-Term Operations (LTO) of the Central Valley Project (CVP) and State Water Project (SWP). The Report provides a status of the habitat restoration work that has been implemented up to the end of water year (WY) 2023 and provides anticipated work during WY 2024. These habitat restoration conservation measures include non-flow, habitat restoration actions to improve spawning and rearing habitat and improve food web conditions.

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## Background

The CVP, which runs approximately 400 miles from the southern end of the Cascade Mountains in the north to the Tehachapi Mountains in the south, allows Reclamation to deliver an estimated seven million acre-feet of water annually for agricultural, urban, and wildlife uses. In 2020, a Record of Decision was signed, supported by an Environmental Impact Statement (EIS) that analyzed the impacts of the LTO of the CVP and SWP. The USFWS and NMFS issued respective Biological Opinions in 2019 that satisfied the Endangered Species Act (ESA) requirements for the LTO action.

In 2013, responding to “Listen to the River, and Independent Review of the CVPIA Fisheries Program” (Circlepoint 2008), Reclamation and the USFWS began a structured decision-making process to improve the scientific basis for restoration projects for salmonids. A Science Integration Team (SIT) comprised of local, state, and federal agencies and interested parties develop and maintain a decision support model to inform restoration needs.

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# Habitat Restoration Projects

Below are all the habitat restoration conservation measures identified in the 2019 proposed action. The sections below provide a status of current habitat restoration work and provide anticipated work to start in WY 2024 and beyond. The listed anticipated work to start in the future is a rough estimate and is not expected to be a schedule. Habitat restoration includes creation, expansion, and grading of floodplains and side channels; adding spawning and large cobble; adding large woody materials for salmonids; and increasing food web support for smelts by restoring tidal habitat.

## Upper Sacramento River

### **Battle Creek Salmon and Steelhead Restoration Project**

Reclamation proposed providing funding for ten years towards reintroduction of winter-run Chinook salmon to Battle Creek. Reclamation will accelerate implementation of the Battle Creek Salmon and Steelhead Restoration Project, which is intended to reestablish approximately 42 miles of prime salmon and steelhead habitat on Battle Creek, and an additional 6 miles on its tributaries. The Battle Creek Restoration Project is a collaborative effort among several federal and state agencies and Pacific Gas & Electric Company. The partnership provides a framework for expanding winter-run Chinook salmon spawning to cold water habitat not in the Sacramento River.

#### ***Project Status***

- Phase 1
  - Removal of Wildcat Diversion Dam and Wildcat Canal
  - Construction of Fish Screens and Fish Ladders on North Battle Creek Feeder and Eagle Canyon Diversion Dams
  - Construction of Fish Barrier Weir on Baldwin Creek
- Phase 2
  - Removal of South Diversion Dam, South Canal, Soap Creek Feeder Diversion Dam, and Lower Ripley Creek Feeder Diversion Dam.
    - Construction completion expected in 2026.
  - Removal of Coleman Diversion Dam and Coleman Canal Diversion Closure
    - Construction completion expected in 2026.

- Construction of South Powerhouse Tailrace Tunnel Connector to Inskip Canal
  - Contract award is on hold.
- Construction of Fish Screen and Fish Ladder on Inskip Diversion Dam – Hydropower Facilities Modification (HFM) Stage 2, Part 1
- Construction of fish screen and fish ladder on Inskip Diversion Dam – HFM Stage 2, Part 2
  - Design on hold
  - PG&E plans to remove the Inskip Diversion Dam
- PG&E does not intend to renew FERC license in 2026.

***Anticipated to Start in WY 2024 and Beyond***

- No projects anticipated to start.

***Conclusion***

Project has multiple sub-projects moving in parallel. No significant issues to note with progress of the entire Battle Creek project.

**Sacramento River – Spawning and Rearing Habitat Restoration**

Reclamation proposed to create additional spawning habitat by injecting approximately 15,000 to 40,000 tons of gravel annually into the Sacramento River to 2030, using the following sites: Keswick Dam Gravel Injection Site, Market Street Injection Site, Redding Riffle, Turtle Bay, Tobiasson Island, Shea Levee sites, and Kapusta.

Reclamation, in coordination with the Sacramento River Settlement Contractors proposed to create 40 to 60 acres of side channel and floodplain habitat at 10 sites in the Sacramento River by 2030. The potential sites include Salt Creek, Turtle Bay Island, Kutrass Lake Rearing Structures, Painter’s Riffle maintenance, North Cypress maintenance, Cypress South maintenance, North Tobiasson Rearing Structures maintenance, Tobiasson Side Channel, Shea Side Channel, Kapusta Side Channel, Kapusta 1-A Side Channel maintenance, Kapusta 1-B Side Channel, Anderson River Park Side Channels maintenance, Cow Creek Side Channel, I-5 Side Channel, China Gardens, Rancheria Island Side Channel maintenance, Rancho Breisgau, Lake California Side Channel maintenance, Rio Vista Side Channel maintenance, East Sand Slough Side Channel, La Barranca Side Channel, Woodson Bridge Bank Rearing Improvement, Jellys Ferry, Dog Island, Altube Island, Blackberry Island, Oklahoma Avenue, Mooney Island, McClure Creek, Blethen Island, Wilsons Landing, McIntosh Island, Shaw, Larkins, Reilly Island, Hanson Island, and Broderick.

***Project Status***

**WY 2022**

- East Sand Slough Side Channel (Complete) – 12 acres of perennial and floodplain rearing habitat.
- Keswick Dam Gravel Augmentation (Complete) – 20,000 tons of gravel.

### **WY 2023**

- Kapusta 1-B Side Channel (Complete) – 5 acres of rearing and spawning habitat.
- Rockwad Rearing Structures at Bonnyview Bridge (Complete) - 20 new juvenile rearing habitat rockwad structures.
- Keswick Dam Gravel Augmentation (Complete) – 6,000 tons of gravel.
- Salt Creek Gravel Augmentation (Complete) – 6,000 tons of gravel.
- Market St Gravel Placement (Complete) – 10,000 tons of gravel.

### ***Anticipated to Start in WY 2024 and Beyond***

- Tobiasson (Micheils) Island Side Channel – Rearing and spawning habitat.
- Kapusta Island Side Channel – 2 acres rearing habitat and 1 acre of spawning habitat.
- Shea Side Channel – 3 acres of rearing habitat and 1.5 acres of spawning habitat.
- Middle Creek Gravel Placement – 10,000 tons of gravel.
- Salt Creek Gravel Augmentation – 6,000 tons of gravel.
- Redding Riffle Gravel Placement – 10,000 tons of gravel.

### ***Conclusion***

24.5 acres of rearing habitat or spawning habitat have been completed, are on-going, or scheduled to start in the near future. Roughly 15.5 more acres are needed to meet the 40 to 60 acre goal by 2030. The goal of 15,000 to 40,000 tons of gravel injected into the Sacramento River has been met each year and is anticipated to be met in WY 2024.

No significant issues to note with progress of the project.

## **Trinity River Division (Clear Creek)**

### **Clear Creek – Channel Maintenance**

Reclamation and DWR proposed to continue channel maintenance under the Clear Creek Restoration Program

### ***Project Status***

#### **WY 2022**

- No habitat restoration projects or gravel placements were completed.

### **WY 2023**

- Lower Clear Creek Floodway Rehabilitation Project (Complete) - Final stages of long-standing Phase 3C and Phase 3B revegetation and irrigation efforts. No gravel.

### ***Anticipated to Start in WY 2024 and Beyond***

- Yurok Tribe selected for Notice of Funding Opportunity (NOFO) for potential start in WY 2024 – NOFO actions include gravel augmentation, wood supplementation, and channel rehabilitation.

### ***Conclusion***

Please refer to the restoration requirements in the Clear Creek Restoration Program.

## **American River**

### **American River – Spawning and Rearing Habitat Restoration**

Project activities include primarily side channel and floodplain creation, expansion, and grading, spawning gravel and large cobble additions, and woody material additions. Pursuant to Central Valley Project Improvement Act (CVPIA) 3406(b)(13), Reclamation proposes to implement the following projects: Paradise Beach, Howe Avenue to Watt Avenue rearing habitat, William Pond Outlet, Upper River Bend, Ancil Hoffman, El Manto, Sacramento Bar North, Sacramento Bar South, Lower Sunrise, Sunrise, Upper Sunrise, Lower Sailor Bar, Upper Sailor Bar, Nimbus main channel and side channel, Discovery Park, Cordova Creek Phase II, Carmichael Creek Restoration and Sunrise Stranding Reduction. Reclamation proposes to continue maintenance activities at Nimbus Basin, Upper Sailor Bar, Lower Sailor Bar, Upper Sunrise Lower Sunrise and River Bend restoration sites.

### ***Project Status***

#### **WY 2022**

- Lower Sailor Bar (Complete) – 13.5 acres of rearing habitat and 4.9 acres of spawning habitat.
- Nimbus Basin (Complete) – 2.5 acres of rearing habitat and 3.7 acres of spawning habitat.

#### **WY 2023**

- Upper River Bend (On-Going) – 6 acres of rearing habitat and 5 acres of spawning habitat. Expected to finish early WY 2024.

### ***Anticipated to Start in WY 2024 and Beyond***

- Lower River Bend – 2 acres of rearing habitat and 1 acre of spawning habitat.

### **Conclusion**

No significant issues to note with progress of the project.

## **Stanislaus River**

### **Stanislaus River – Spawning and Rearing Habitat Restoration**

Under the CVPIA 3406(b)(13) program, Reclamation’s annual goal of gravel placement is approximately 4,500 tons in the Stanislaus River. Reclamation proposes to construct an additional 50 acres of rearing habitat adjacent to the Stanislaus River by 2030.

### **Project Status**

#### **WY 2022**

- No habitat restoration projects or gravel placements were completed. Gravel placement goal is ahead of schedule.

#### **WY 2023**

- No habitat restoration projects or gravel placements were completed. Gravel placement goal is ahead of schedule.

### **Anticipated to Start in WY 2024 and Beyond**

- Goodwin Canyon Gravel Placement – 5,000 tons of gravel. Expected September 2024

### **Conclusion**

The 4,500 tons of gravel injection into the Stanislaus River has been met each year and is expected to be met in WY 2024.

No projects are currently programmed to meet the 50 acres of rearing habitat adjacent to the Stanislaus River by 2030.

## **San Joaquin River**

### **Lower San Joaquin River Rearing Habitat**

Reclamation may work with private landowners to create a bottom-up, locally driven regional partnership to define and implement a large-scale floodplain habitat restoration effort in the Lower San Joaquin River. This stretch of the San Joaquin River is cut-off from its floodplain due to an extensive levee system, with two notable exceptions at Dos Rios Ranch (1,600 acres) and the San Joaquin River National Wildlife Refuge (2,200 acres). In recent years, there has been growing interest in multi-benefit floodplain habitat restoration projects in the Central Valley that can provide increased flood protection for urban and agricultural lands, improved riparian corridors for terrestrial plants and wildlife, and enhanced floodplain habitat for fish. The resulting restoration could include thousands of acres of interconnected (or closely spaced)

floodplain areas with coordinated and/or collaborative funding and management. Such a large-scale effort along this corridor would require significant support from a variety of stakeholders, which could be facilitated through a regional partnership.

### ***Project Status***

#### **WY 2022**

- No habitat restoration projects were completed.

#### **WY 2023**

- No habitat restoration projects were completed.

#### ***Anticipated to Start in WY 2024 and Beyond***

- Head of Old River Scour Hole – Reduce predation intensity at the selected scour hole on the lower San Joaquin River. Project developing alternatives.

### ***Conclusion***

No projects are currently programmed for floodplain habitat restoration in the Lower San Joaquin River. DWR and Reclamation have limited discretion with this conservation measures. This conservation measure does not set an acreage or timeframe to be met.

## **Delta**

### **Delta Tidal Habitat Restoration**

DWR and Reclamation will carry out 8,396 acres of tidal habitat restoration identified in the 2019 USFWS Biological Opinion by 2026. DWR will monitor, operate, and maintain the tidal habitat restoration, including obtaining permanent land rights. Consistent with the current regulatory process, future separate consultations would address the effects to listed species from habitat restoration.

### ***Project Status***

DWR has constructed eight tidal habitat restoration projects totaling 4,111 acres of tidal habitat and has three projects currently on-going in construction totaling 4,787 acres. In total, accounting for 8,898 acres.

To date, none of these projects have been credited, although several that are constructed are in the process of submitting required documentation to complete the crediting process.

### **WY 2022 and Prior**

- Decker Island (Completed 2018) - 113 acres in Lower Sacramento
- Yolo Flyway Farms (Completed 2018) - 296 acres in Cache Slough Region
- Winter Island (Completed 2019) – 544 acres in Lower Sacramento / Confluence

- Tule Red (Completed 2019) – 590 acres in Suisun Marsh
- Lower Yolo Ranch (Completed 2020) – 1,713 acres in Cache Slough Region
- Wings Landing (Completed 2020) – 190 acres in Suisun Marsh
- Arnold Slough (Completed 2021) - 141 acres in Suisun Marsh
- Bradmoor Island (Completed 2022) – 524 acres in Suisun Marsh

### **WY 2023**

- Lookout Slough Tidal Habitat Restoration and Flood Improvement Project (On-Going) – 3,000 acres of Delta smelt habitat. Expected to be completed in fall 2024.
- Chipps Island (On-Going) - 687 acres of Delta smelt habitat. Expected to be completed in fall 2025.
- Prospect Island (On-Going) - Approximately 1,100 acres of Delta smelt habitat. Expected to be completed in fall 2026.

### ***Anticipated to Start in WY 2024 and Beyond***

- No projects anticipated to start in WY 2024.

### ***Conclusion***

No significant issues to note with progress of the project.

### **Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project**

Reclamation and DWR will provide increased acreage of seasonal floodplain rearing habitat available in the lower Sacramento River basin by 2030. The Yolo Bypass Salmonid Habitat Restoration and Fish Passage project will allow increased flow from the Sacramento River to enter the Yolo Bypass through a gated notch on the east side of Fremont Weir.

### ***Project Status***

#### **WY 2022**

- No habitat restoration or fish passage projects were completed.

#### **WY 2023**

- Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project “Big Notch” (On-Going) – Allows increased flow for fish passage from the Sacramento River into the Yolo Bypass. Expected to be operational in 2024.
- Wallace Weir Fish Rescue Facility (On-Going) – Improvements to weir infrastructure and fish barrier for CDFW biologists to collect salmonids to be transferred to the Sacramento River. Expected to be operational in early WY 2024.

### ***Anticipated to Start in WY 2024 and Beyond***

- Agricultural Road Crossing #4 (ARC4) – The action will replace an earthen road crossing with open-channel bridge to allow fish passage. Scheduled to begin in WY 2024.

### ***Conclusion***

No significant issues to note with progress of the project.

## **References**

2008. Circlepoint. Listen to the River: An Independent Review of the CVPIA Fisheries Program. Prepared under contract for the U.S. Bureau of Reclamation and the U.S. Fish and Wildlife Service. December. 51 pages plus 4 appendices.