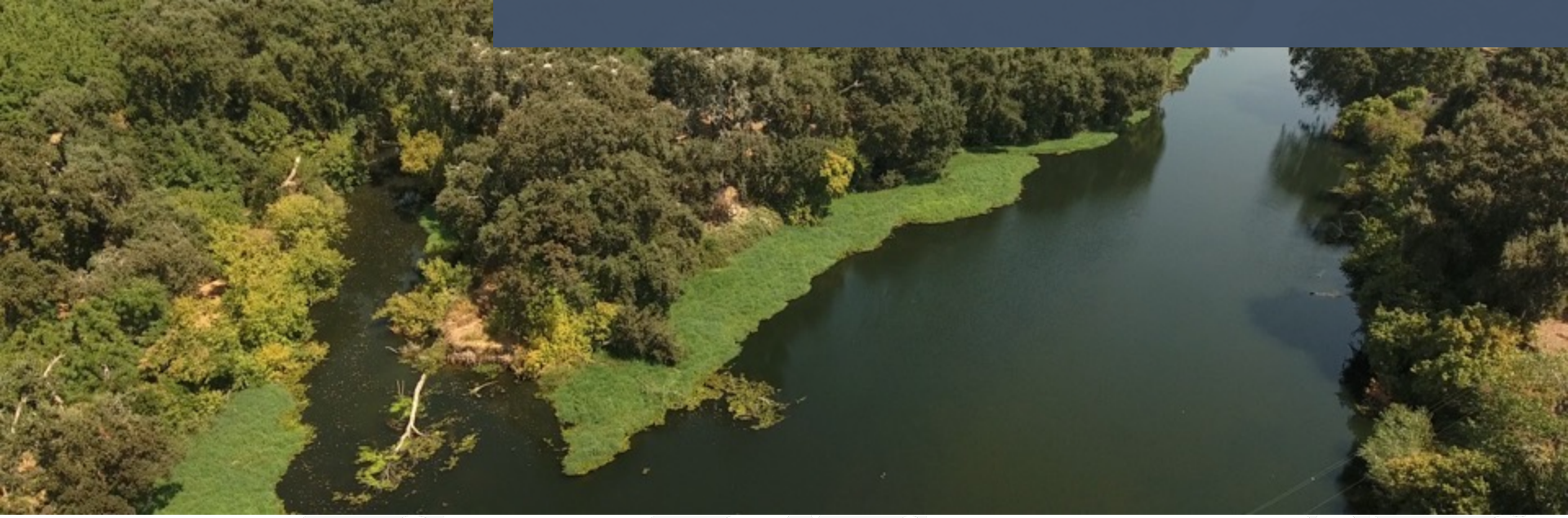
Hosie Low-Flow Crossing Fish Passage Improvement Project

Prepared in collaboration with:

STOCKTON EAST WATER DISTRICT

FISHBIO

DEPARTMENT OF WATER RESOURCES • STATE OF CALIFORNIA •



Overview

- The Calaveras Habitat Conservation Plan
- The CHCP and Fish Passage
- Species that Drive Management on the Calaveras River
- The Hosie Low-Flow Crossing
- Post Project Monitoring

What is a Habitat Conservation Plan?

- A written agreement between stakeholders and NOAA Fisheries that provides legal authorization for take of ESA listed species for a period of up to 50 years.
- Stakeholders must operate within the confines of the HCP to be protected from prosecution for take.
- The HCP will cover District stakeholders for normal activities related to water diversion.
- The HCP will require the District to continue to minimize the impacts of its operations on ESA listed species.

Details of the HCP Process

- Had been in development for several years.
- The District, and their biologists, have worked closely with NOAA Fisheries during development.
- The District has engaged with other resource agencies and stakeholders while finalizing the written plan.
- HCP approved in September 2020.
- The District will now operate within the bounds described in the HCP.

What are the goals of the HCP?

- Maintain reliable water delivery to stakeholders by providing greater water security over a 50-year period.
- Comply with ESA laws and obtain an annual, predictable take allotment.
- Protect and manage fishery resources, particularly rainbow and steelhead trout.
- Provide a forum for stakeholder and citizen input in Calaveras River management.

The CHCP and Fish Passage Projects

- Fish passage improvements identified as key conservation strategy in CHCP.
- SEWD has committed to improving a minimum of five of the Tier 1 structures as identified in the Calaveras River Fish Migration Barriers Assessment Report (DWR 2007).
- Tier 1 are those identified as having the highest potential to impair fish passage.
- The five structures are in addition to the Bellota Weir Modification Project.

Photo by Steve Martarano (USFWS)

Fish Passage Improvements - Components of the HCP

Structure	Location River Miles	Structure Type	Proposed Design	Status
Budiselich Flashboard Dam	7.5	Flashboard Dam, shallow depth, steep slope	Rock ramp fishway and boulder weirs	Completed 2011
Caprini Low Flow Crossing (CLFC)	12.7	Low flow road crossing, 3-3ft diameter culverts, velocity	Replace culverts and install grade control structures	Completed 2013
Central California Traction Railroad Crossing	6.5	Bridge with footing apron, shallow depth	Install 7 grade control structures, i.e. boulder weir	Completed 2019
Hosie Low Flow Crossing	13.2	Concrete low flow road with no culverts, riprap	Install new culvert and remove riprap	Completed 2024
Watkins Crossing	19	Concrete low flow road with no culverts, riprap	Install new culvert and remove riprap	Construction planned for Summer 2025

Which Species Drive Management on the Calaveras River?

California Central Valley Steelhead (*Oncorhynchus mykiss*)

- Two forms
  - Rainbow Trout
    - Resident (Top)
  - Steelhead
    - Anadromous (Bottom)

- Listed as "Threatened," January 2006.

- The Calaveras HCP is specifically focused on conserving and protecting *O. mykiss.*

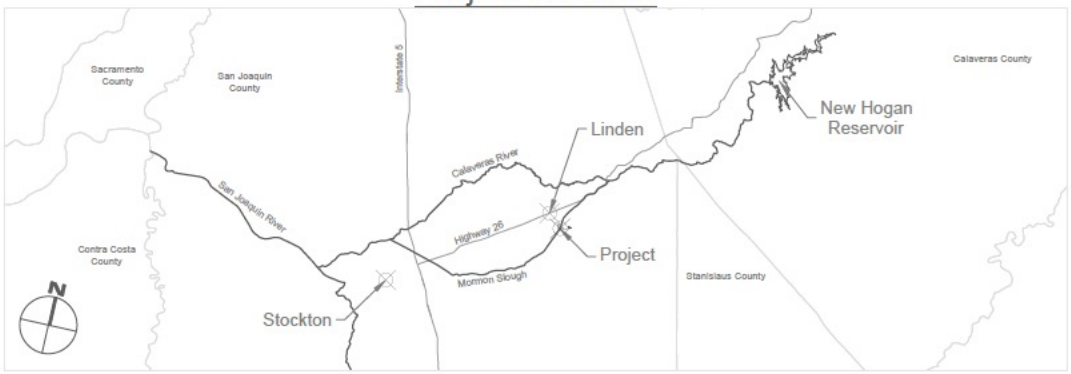
What Species Drive Management on the Calaveras River?

Chinook salmon (*Oncorhynchus tshawytscha*)

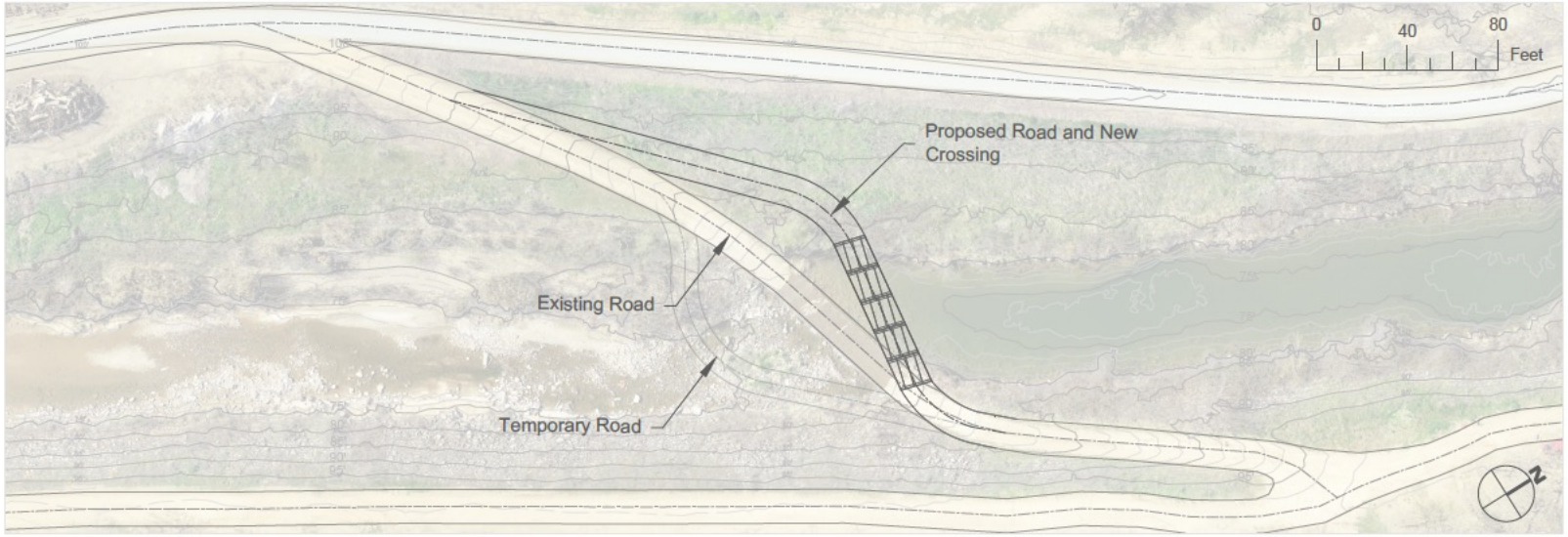
- The HCP does not consider a primary species of concern but does offer coverage.
- Historic use of the Calaveras unknown.
- Uses the Calaveras opportunistically, not present in all years.
- Two potential runs:
  - Spring-run (ESA listed)
  - Fall-run (Not listed)

Hosie Low-Flow Crossing

Project Location



Project Overview



Hosie Low-Flow Crossing

- Located at river mile 13.2 on Mormon Slough.
- Crossing consists of a concrete road prism with no culverts and lined with rip-rap.
- 1.5 ft elevation above substrate and 13 ft wide.
- Pre-project limitations:
  - Need flows greater than 320 cfs for adult salmonids.
  - Downstream more limiting due to riprap; 460 cfs.
  - Velocity barrier at flows between 100 and 190 cfs.
  - Juveniles limited at flows less than 100 cfs.

Hosie Low-Flow Crossing

- One of several projects SEWD has collaborated with DWR.
- Revised design like that used for Caprini Low-Flow Crossing in 2013.
- Five culvert sections measuring 9 ft tall by 12 ft wide, total distance approx. 70 ft.
- Crossing moved 70 ft downstream and rotated to better align with the channel.
- Regraded to a 0.5% slope and removing and replacing streambed material in a 300 ft section.

Hosie Low-Flow Crossing

- Project Completed: October 31, 2023

Hosie Low-Flow Crossing

CDFW Recommended Performance

- CDFW recommends unimpaired passage for adult Chinook between 15-1590 cfs
- CDFW recommends unimpaired passage for *O. mykiss* between 19-5460 cfs
- CDFW recommends unimpaired passage for juvenile Chinook between 1-1248 cfs

DWR - Post Project Performance

- Adult Chinook Passage: 15-1590 cfs, unimpaired passage ~75% of time
- Adult *O. mykiss* Passage: 15-5460 cfs, unimpaired passage ~80% of time
- Juvenile Salmonid Passage: 5-1248 cfs, unimpaired passage ~85% of time

Post Project Monitoring

- DWR has been conducting flow depth/velocity monitoring using a handheld ADV at several of the previously completed sites; plans for Hosie in place.
- While no specific post project monitoring program in place, effectiveness monitoring can be supported by the Calaveras Anadromous Fisheries Monitoring Program required by the CHCP.
- Annual adult monitoring occurs at the Bellota Fish Ladder between approximately November 1 to April 15.
- Annual juvenile outmigration monitoring occurs at the Shelton Rd. Bridge crossing from approximately November 1 to June 30.
- Calaveras Juvenile *O. mykiss* > 70mm are fitted with PIT tags via RST and Hook and Line sampling.

Summary

- With the completion of the Hosie Fish Passage Project, the District has completed four projects to improve passage in the lower reaches of Mormon Slough/Calaveras River.
- Improved fish passage through Mormon Slough is integral to the overall success of the Calaveras HCP.
- The Bellota Weir Modification Project will be the final piece to provide quality access to the 18 miles of habitat above Bellota considered the key Conservation Area, expanding the benefits of the downstream projects.

Thank You

- If you have any additional questions, please feel free to contact us:

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