



# Klamath River Dam Removal

## Project Overview



*Restoring the natural vitality of the Klamath River*



# Presentation Overview

- The Klamath Basin
- Background and KRRC/Yurok Tribe Overview
- Project Overview
- Regulatory Processes
- Construction Overview
- Next Steps
- Questions



# Klamath River Basin

Commercial Fishermen



Klamath Hydroelectric Project

Klamath Tribes

Upstream Irrigators

National Wildlife Refuges

Klamath Irrigation Project

Downstream Irrigators

Karuk

Yurok

Hoopa

Eureka

Weaverville

Redding

Trinity River

Oregon

California

Pacific Ocean

BLM Land

Medford

Yreka

Klamath Falls

Bonanza

Harpolo Dam

Gerber Dam

Anderson-Rose Div

Clear Lake Dam

Clear Lake

Lower Klamath Lake

Jule Lake

Trinity Dam

Crater Lake

Wood River

Willamette River

Agency Lake

Chilpouin Dam

Upper Klamath Lake

Link River Dam

Keno Dam

J.C. Boyle Dam

Corcoran No 1

Corcoran No 2

Iron Gate

South River

Shasta River

Trinity Lake

Lewisiston Dam

Buckhorn Dam

Salmon River

Trinity River

Trinity River

Trinity River

Trinity River

Trinity River

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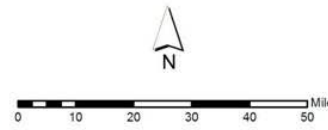
Trinity River

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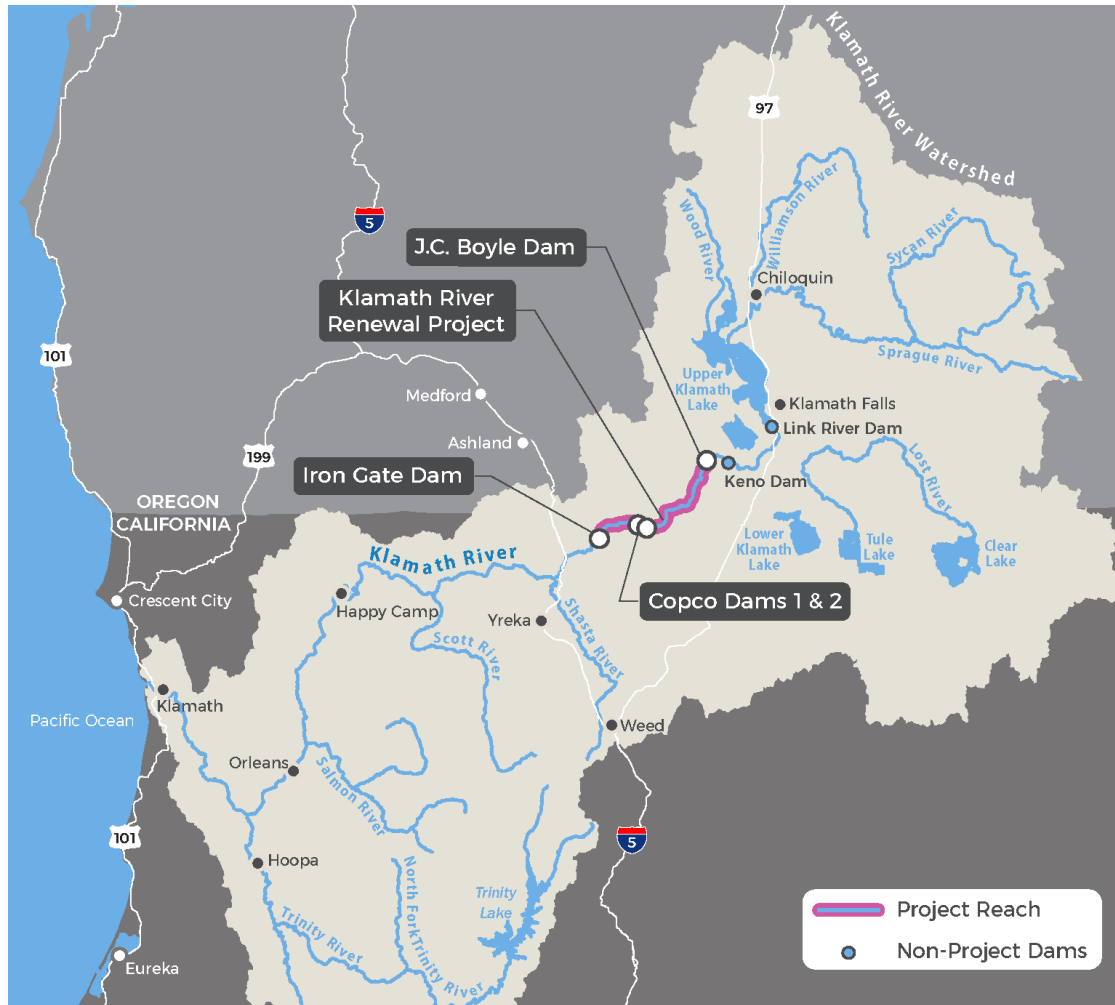
## Yurok Tribe's Approach to River Restoration

- Landscape-scale; not afraid to think big. Ridgetops to rivers.
- Address integrated ecosystem as a way to restore salmon. “It has to work for the fish.”
- Traditional Ecological Knowledge meets western science.
- Mission is to ensure salmon security for future generations
- Climate change resiliency



Photo and art credit: Louisa McCovey

# Klamath River Renewal Corporation



- Launched in 2016
- Single mission: Restore fish passage & improve water quality, primarily by decommissioning four hydroelectric dams

Klamath River Basin



# History of Dam Removal Discussions

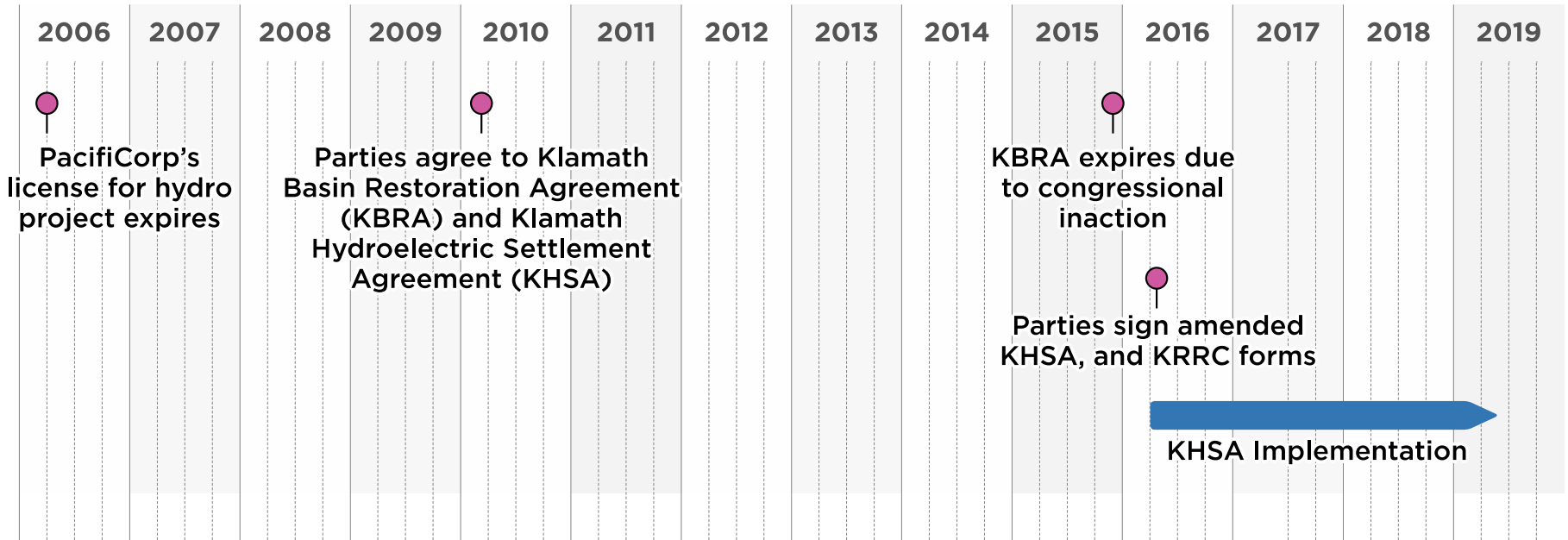


Photo Credit: Karuk Tribe

# Hydroelectric Dams to be Removed



Copco No. 1 | CA



Copco No. 2 | CA



JC Boyle | OR



Iron Gate | CA



# Fisheries Benefits

Salmon, steelhead, and lamprey gain access to 400+ stream-miles of historic upstream habitat.



Geomorphic conditions support polychaete worm growth and fish disease parasite *Ceratonova shasta*.

Credit: Dr. J. Alexander, Oregon State University



# Water Quality Benefits



**Improves water quality for fish habitat**

Credit: Karuk Tribe



**Increases dissolved oxygen**



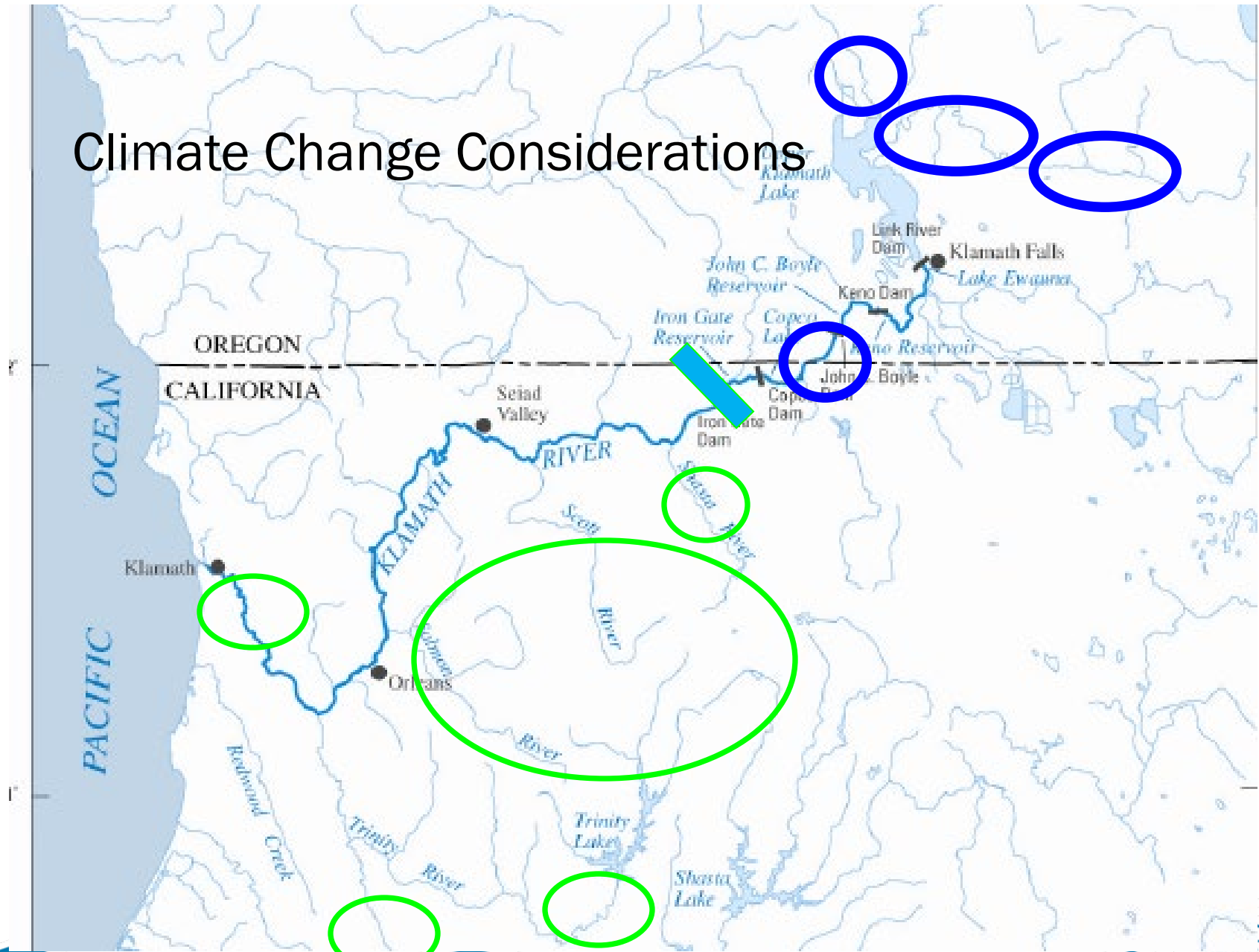
**Eliminates toxic reservoir algae**

Credit: Karuk Tribe



Credit: EcoFlight

# Climate Change Considerations





# Project Funds Available

- PacifiCorp customer funds via PUC funding agreements
  - \$200m
- California Prop. 1 Bond Funds
  - Up to \$250M
- Total Available Funding: \$450M
- \$45m contingency fund shared equally by PacifiCorp, CA, and OR.



Klamath River between JC Boyle Dam and Powerhouse

# Regulatory Schedule

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## Milestones

### FERC Applications Submitted September 2016

- Transfer Application
  - Partial Transfer Order issued on July 26, 2020 by FERC
  - PacifiCorp files **Notice of Termination of Agreement**
  - Agreement is renegotiated with CA and OR agreeing to be co-licensees after transfer; November 17, 2020
  - Amended Joint License Transfer Application resubmitted on January 13, 2021 by PacifiCorp, KRRC, CA, and OR.
  - Final License Transfer Order issued on June 17, 2021
- Surrender Application
  - Amended License Surrender Application submitted on November 17, 2020
  - FERC drafting EIS. This is driving the current schedule.

### 401 Water Quality Certifications Issued

- OR final certification released on Sept. 7, 2018
- CA final certification released on April 7, 2020

### California CEQA Final EIR Issued April 7, 2020

### Approval of Property Asset Disposition from Four Public Utilities Commissions Secured July 2021

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"I recognize the importance of Klamath dam removal and river restoration for tribal people in the Klamath Basin. We appreciate and respect our tribal partners for their collaboration in forging an agreement that delivers an exceptional outcome for the river, as well as future generations. Working together from this historic moment, we can complete the project and remove these dams."

Warren Buffett, November 17, 2020.

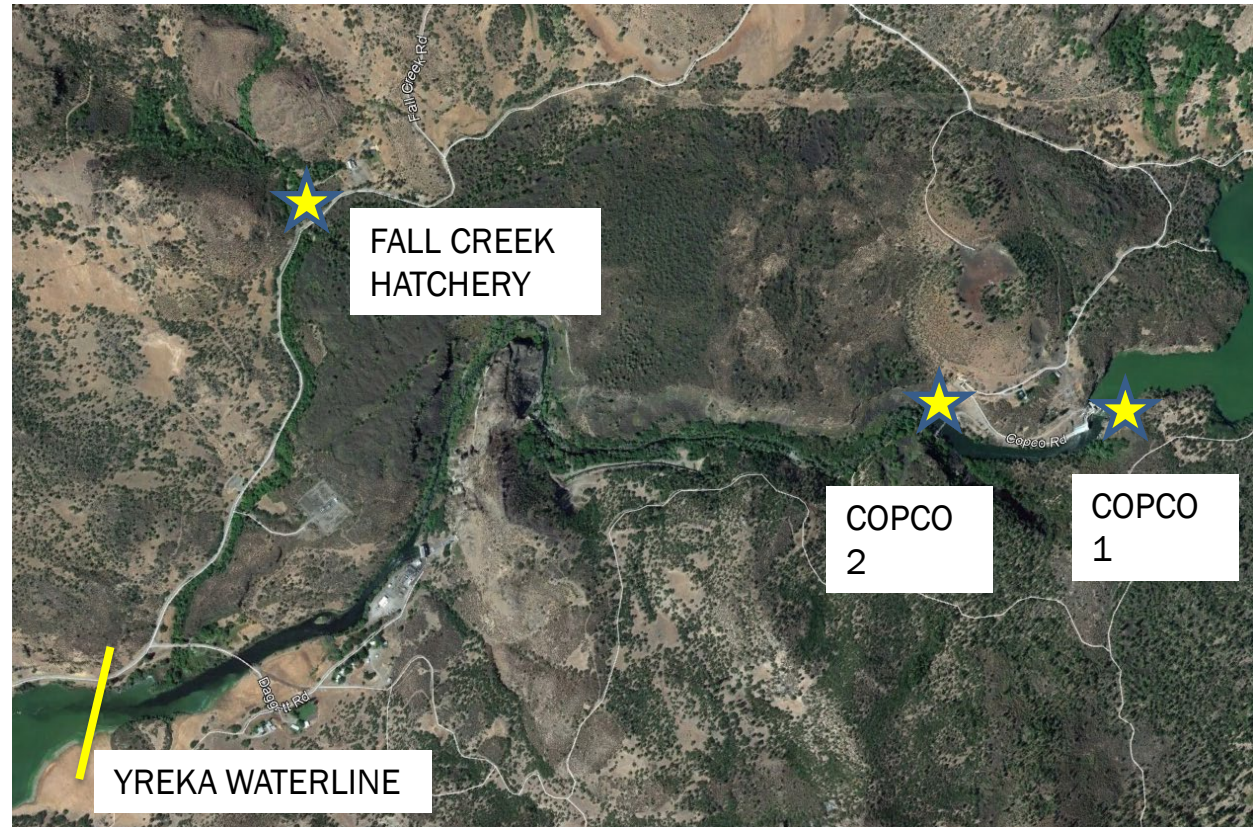
# Major Work Components





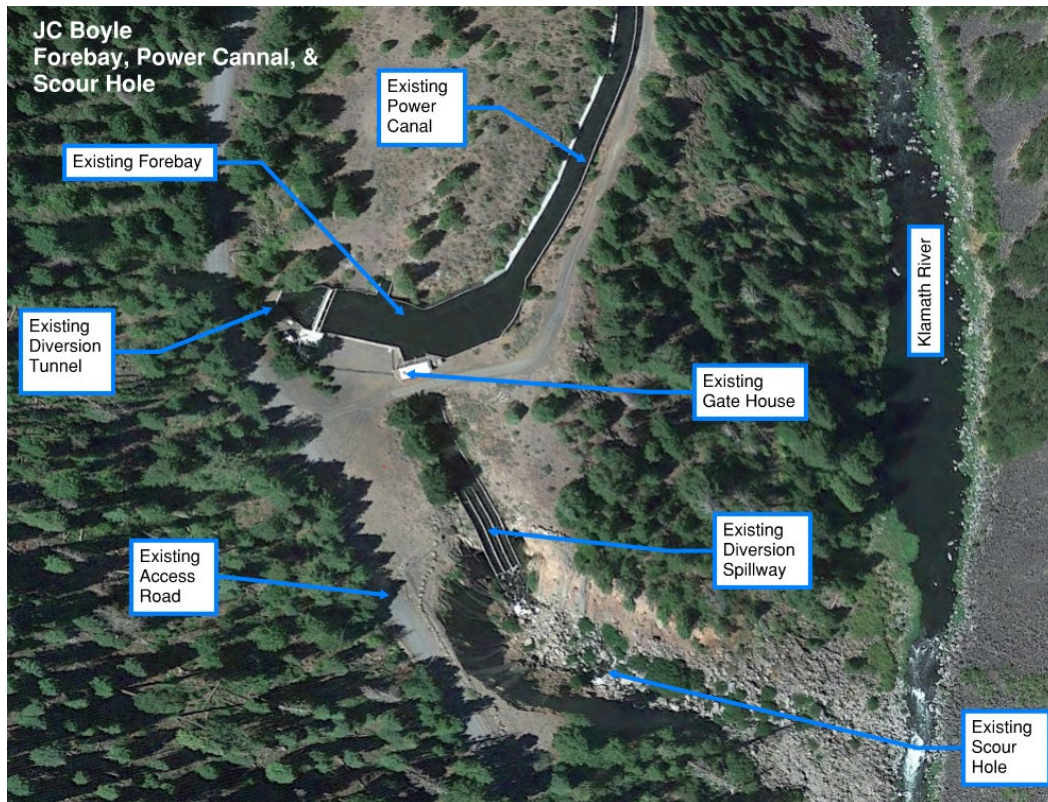
# Early Construction Work

- Yreka Waterline
- Fall Creek Hatchery
- Dam modifications
  - Copco
  - Irongate
- Road improvements





# JC Boyle

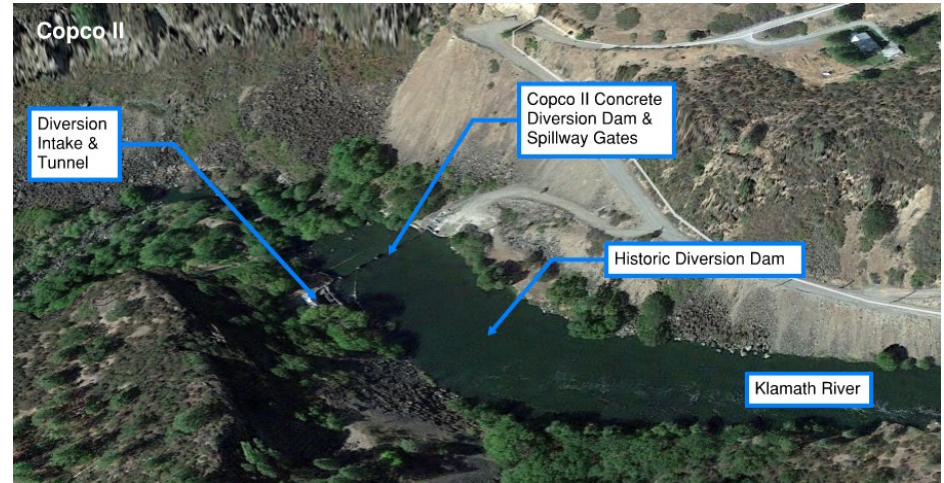


- Small Dam and Reservoir
- Power Canal Removal
- Scour Hole



# Copco I & II

- Pre-Drawdown
  - Dredging in front of Copco I and Diversion Tunnel Intake to clear debris and sediment materials



- Copco II
  - Smallest Dam & Simplest Removal
  - Pre-Drawdown Removal



# Iron Gate



Credit: Michael Wier/CalTrout

## Challenges:

- Remote Area
- Controlled Breach
- Iron Gate Tunnel
  - More challenging aspect of the project
  - Required extensive engineering analysis

# Next Steps

- Federal Reviews and Authorizations
  - National Environmental Policy Act
    - Draft Environmental Impact Statement any day now
    - If final EIS by July 2022, work will proceed, and drawdown/sediment release will happen in January 2023. If final EIS is delayed, work will be delayed 12 months.
  - US Army Corps of Engineers Clean Water Act Section 404 Permit
  - Formal Consultation with Tribes, and California and Oregon State Historic Preservation Officers under the National Historic Preservation Act Section 106
- Advance development of the Local Impact Mitigation Fund
- Ongoing regulatory processes & stakeholder outreach





# Questions?

## Wok-hlew' (thank you)

