# **Eel River Forum Virtual Workshop**

# **Eel River Watershed Restoration and Conservation Program**

# Review of Task Progress October 4, 2023

Resilience in Action for the Eel River Watershed















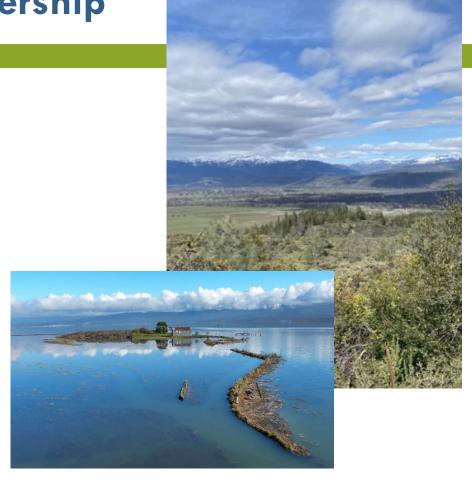
### Tribal land acknowledgment and partnership

The Eel River is the unceded ancestral home of several Tribe groups and also the home of other Tribes that were moved to the area in the 19-20th Century.

We are working with the Wiyot Tribe and Round Valley Indian Tribes (RVIT):

- fisheries monitoring framework
- watershed mapping
- outreach

RVIT: Yuki, Pit River, Pomo, Nomlacki, Concow, Wailacki



We are committed to the long term, placebased relationships that support meaningful understanding of, and action for tribal sovereignty in the Eel River Watershed.

## Meeting agenda

Introduction

Program Vision and Overview

Update on the PLAN: Tasks 1, 2, 3, 4

Questions and Discussion

Community Announcements



### **Meeting Participation**



- This meeting is being recorded.
- The slides will be available after the presentation.
- We will not have a formal break, please take your own breaks as needed.
- Please put your questions in the chat during the presentation.

We will respond to questions at the end of the presentation.

## The Project Team





Darren Mierau North Coast **Regional Director** 





Dr. Gabe Rossi Aquatic Ecologist (UC Berkeley)





Dirk Pedersen Aquatic Ecologist/ **Project Manager** 



**Abel Brumo** Fisheries Biologist



Jay Stallman Geologist/ Geomorphologist





Scott McBain Fluvial Geomorphologist



Dr. Tim Caldwell **Aquatic Ecologist** 



Wyatt Smith **Eel River Coordinator/ Fisheries Biologist** 



Dr. Suzanne Rhoades (nee Kelson) **Aquatic Ecologist** 

#### Big thanks to our Technical Advisory Committee (TAC)

#### <u>TAC</u>

NMFS – Josh Fuller, Matt Goldsworthy,

Ruth Goodfield

CDFW – Seth Ricker, Allen Ringer,

Chris Loomis, James Ray

USFS - Dr. David Dralle

Sonoma Water - David Manning

UC Berkeley - Dr. Mary Power

BLM - Zane Ruddy

USFWS - Josh Boyce

Wiyot Tribe – Marisa McGrew

#### Guest advisors

NMFS - Julie Weeder

CDFW - Kaydee Boozel

California Trout — Charlie Schneider

USFS – Josh Abel

#### **Program Vision and Overview**

# Eel Restoration and Conservation Program Vision Statement

A restored Eel River watershed that supports diverse and resilient habitats from headwaters to sea, self-sustaining native fish, and healthy local communities.

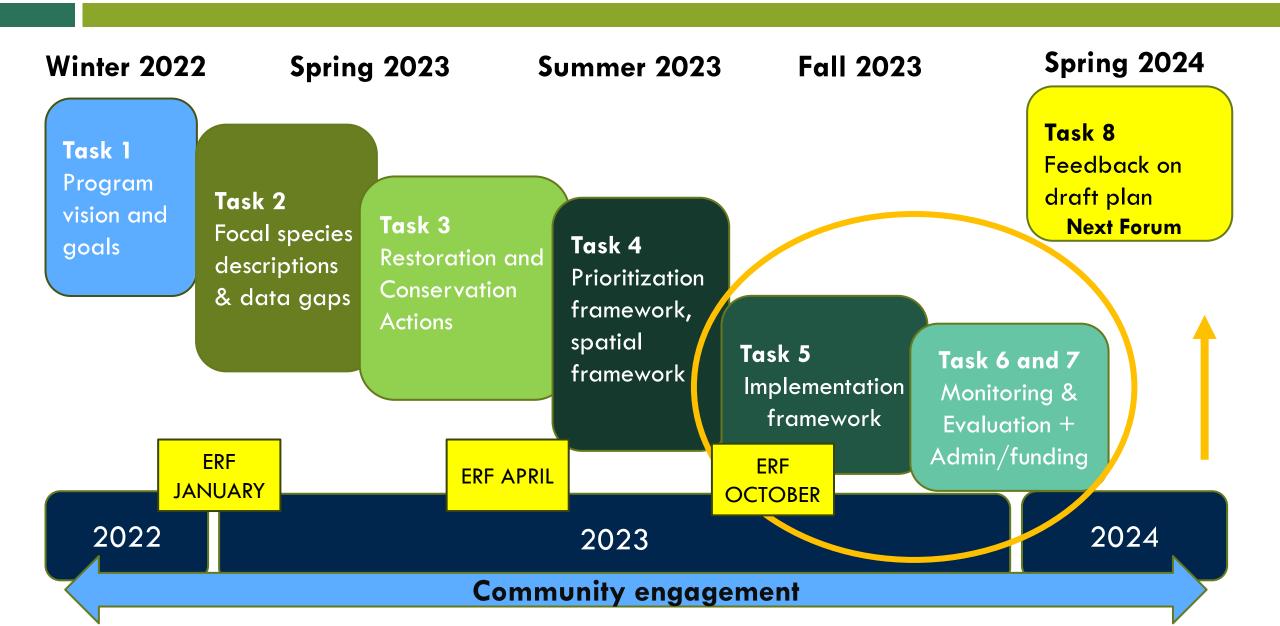
#### **Program Vision and Overview**

What is the Program and what is the Restoration and Conservation Plan?



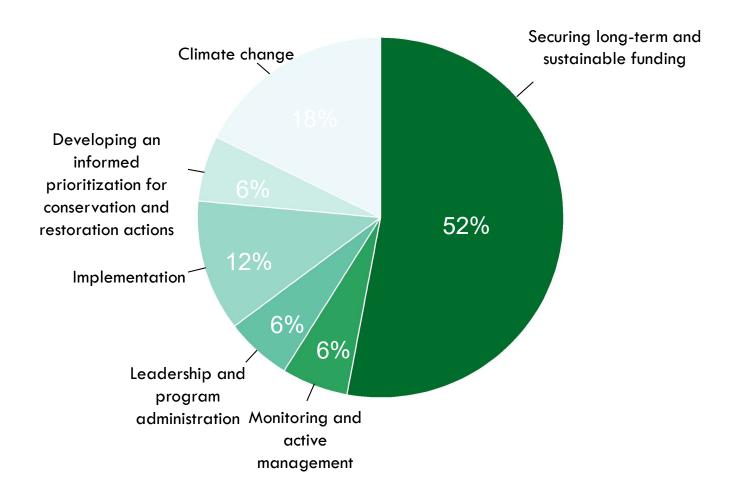
**Program** 

### Program Vision and Overview: Phase 1 Timeline



## Eel River Forum – In Fortuna, January 2023

# Largest challenges to success for this Restoration Program?

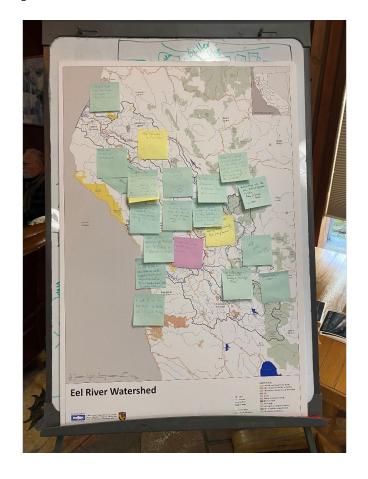


# What single restoration or conservation action in the Eel River?



### **Eel River Forum in Covelo, April 2023**

What are the most important places in the Watershed to protect and restore?



Pink cones on the Van Duzen

Restoring flows and removing fish passage barriers

Eel River mouth, where two worlds come together and benefit from each other

Cold water springs of red mountain into the S Fork and E Branch of the South Fork Mainstem Eel, Love S Fork

Macroinvertebrates

The Oak trees on the drive to Covelo

Beaver at outlet - dams out

Chinook spawning in Bull Creek and Indian Creek, the very 1st spawner season

Yuki Wilderness, Thatcher Creek, living in Geologic time!

Eel River from Dos Rios to Alder-point is a great section to raft. It would be great to identify restoration opportunities with the Great Redwood Trail

Massive rocks along the Eel and its major tributaries

Rattlesnake Creek

Hell Hole Gorge

I love the emerald color of the river.

after a day swimming. I love seeing

I love how clean and healthy I fell

raptors fly overhead.

Swimming in the SF Eel during the summer, better water quality over summer and less blue green algae

Backpacking into the Yolla Bolly Wilderness and visiting Balm of Gilead Creek in 1992

I love all the different ecosystems within this basin

AmeriCorps member in 1998

beauty and expose and grow their knowledge of our watershed and locations within it.

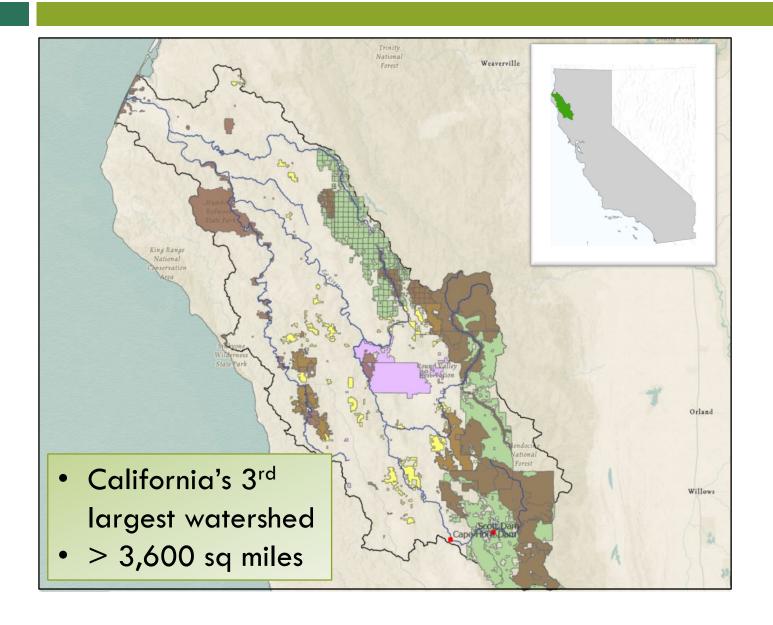
Being able to involve youth in the

Geology of the Eel

A summer field season spent surveying roads in the NF Eel as an

I want to see the Eel River as healthy as it used to be.

#### Where? The Eel River Watershed, a watershed-wide Program



Major land ownerships:

Tribe lands

Forest Service

Bureau of Land Management

~18% Protected areas, public and private easements, State Parks

. \_ \_

56% private land ownership (non-Tribe)

## Eel Watershed % protected areas

We assessed the <u>percent of</u> protected areas in each of the 7 major sub watersheds of the Eel.

**Total Acres** 

482363.38

453689.88

441197.19

180959.72

191102.23

274130.59

333350.36

2356793.36

40

**Eel Sub watershed** 

1 Middle Fork Eel

2 Upper Main Eel

3 South Fork Fel

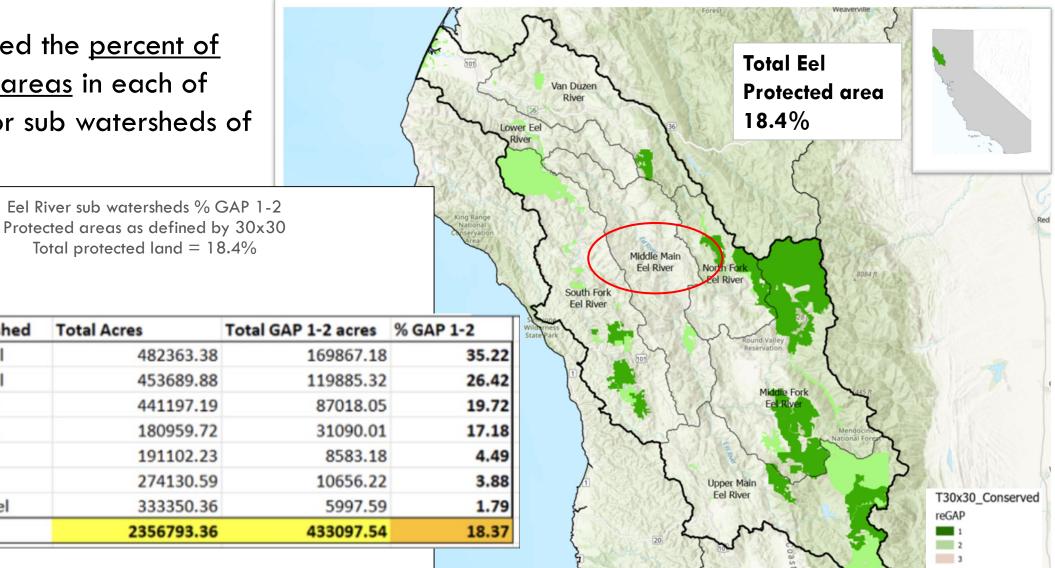
4 North Fork Eel

7 Middle Main Eel

5 Lower Eel

6 Van Duzen

**Entire Eel Watershed:** 



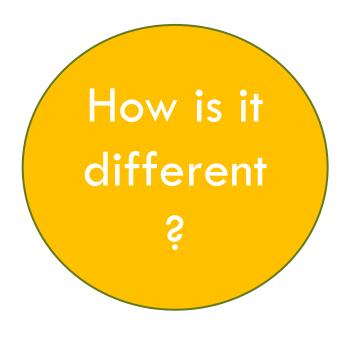
# Eel River Restoration and Conservation Program Phase 1 = THE PLAN



- Develop Program Vision & Goals
- Select focal species
- Develop conceptual life cycle models to identify limiting factors and data gaps
- Describe and categorize actions that address limiting factors
- Develop prioritization process
- Develop monitoring, implementation, and management framework

= The Plan -> Draft Roadmap March 2024

#### THE PLAN is needed because...



- Watershed wide Plan and Program
- Pulls together information from different planning and species recovery plans
- Integrates the needs of multiple species
- Incorporates spatial planning and prioritization
- Recommends conservation / restoration action areas
- Builds a framework to prioritize watershed needs
- Emphasizes fish life history diversity needs
- Develops a monitoring framework to assess success

#### = The difference

## **UP NEXT**

Project Team presents on our progress 2:30-3

Questions and Discussion 3-3:30

Community announcements 3:30-4



#### **Our Progress**

Task 1



# Program Vision and Goals

Received and incorporated feedback from online comments and in person meetings and workshops.

Task 2



# Focal species + spatial hierarchy

Developed <u>conceptual models for</u> <u>focal fish species</u> and life history strategies to predict stressors and needs.

Developed <u>spatial hierarchy</u> for restoration planning, including 'channel archetypes' to identify functionally unique habitats.

Task 3



# Restoration & conservation actions

Identified and categorized restoration actions, to inform the prioritization process in Task 4.

Tasks 1, 2, and 3 — inform **Task 4** 



**Prioritization Framework** 

### Task 1 - Program Vision and Goals

#### November/December 2022

 Program Vision and Goals were developed by the Project Team with input from the Technical Advisory Committee.

#### **February 2023 - April 2023**

 Goals presented and reviewed in small group workshops at the Eel River Forum meetings in Fortuna and Covelo.

#### October 2023

 Revised Goals are distributed following this Eel River Forum meeting.

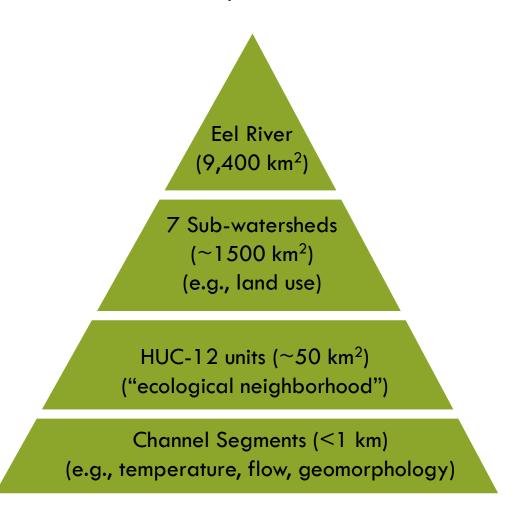
#### Winter 2024

 Revised Goals will be incorporated into the Plan document.



#### Task 2 - Spatial Hierarchy for Restoration Planning

Hierarchical spatial planning will allow for integration of datasets at different spatial scales for characterization and prioritization





### Task 2 - Focal species and life history strategies

The Eel River watershed supports many native fish species, including the focal species for the Plan:

- Chinook Salmon
- Coho Salmon
- Steelhead / Rainbow Trout
- Green Sturgeon
- Pacific Lamprey

Across the 7 sub-watersheds, varied habitats have potential to support diverse life histories of these and other native species.

Half-pounder



Age 1 and Age 2 smolts



Anadromous adult



Resident adult



## Task 2 - Life history diversity as a fisheries restoration strategy

#### Life history diversity provides:

- Population resilience
  - "Portfolio" of life history tactics, where success of each tactic varies through time
- Increased abundance
  - Diverse use of habitats through space and time increases total numbers

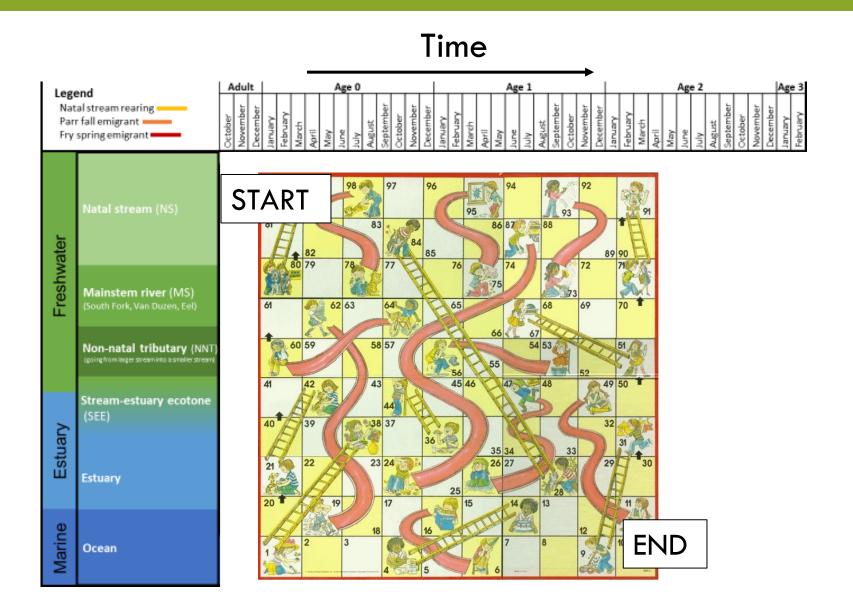


"Don't put all your eggs in one basket"

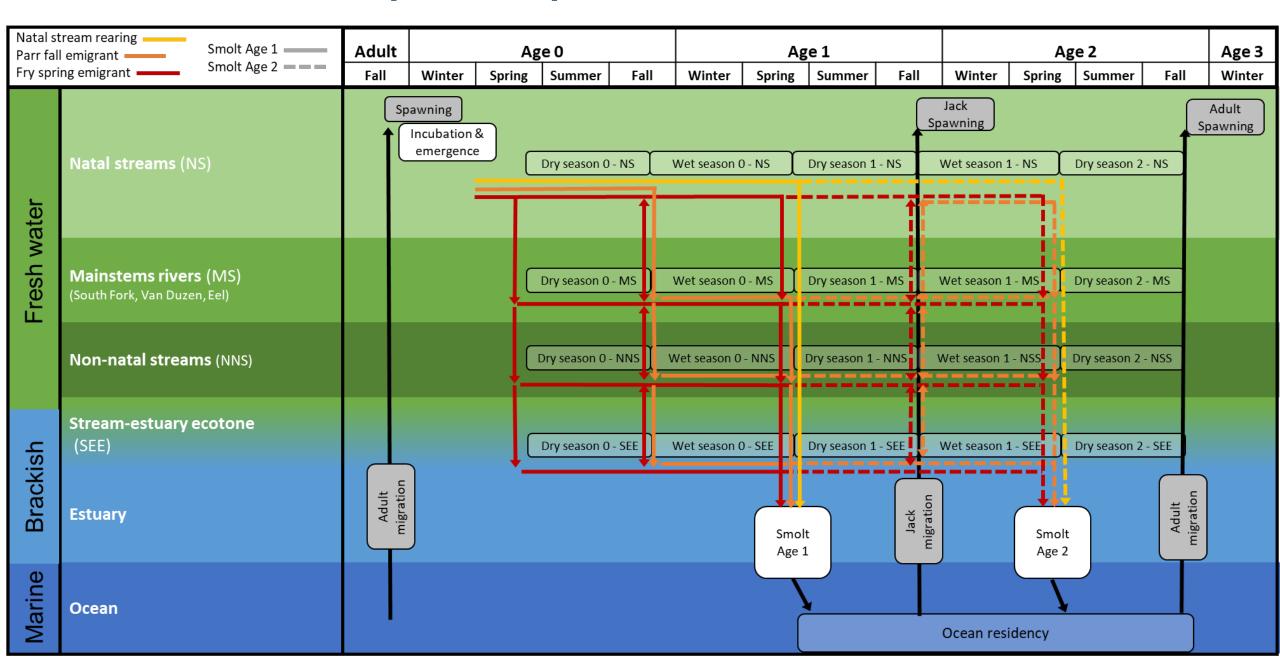
What is missing from the current portfolio? How do we restore life history diversity?

#### Task 2 - Species conceptual model diagrams: Coho Example

# Upstream Habitat Downstream

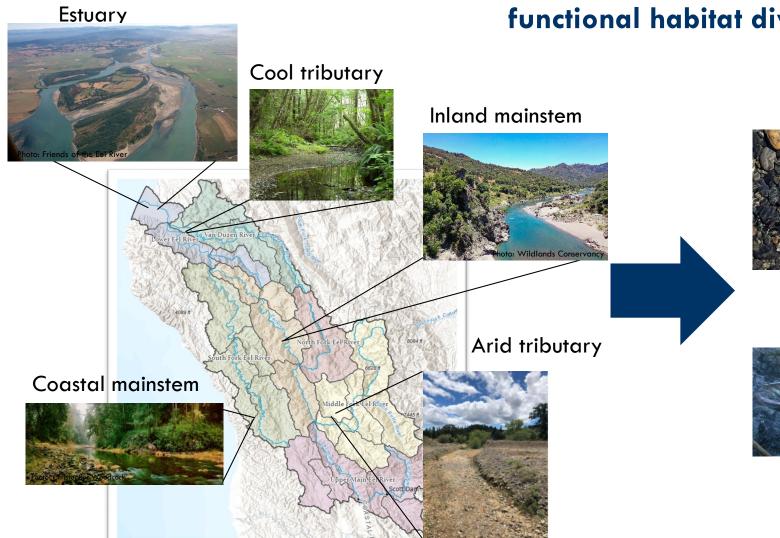


#### Task 2 - Example conceptual model: Coho Salmon



## Task 2 - Habitat diversity Life history diversity

We can't directly restore life history diversity, but we can work to restore functional habitat diversity.



Half-pounder



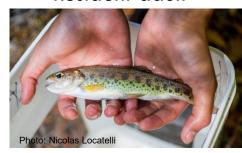
Age 1 and Age 2 smolts



Anadromous adult

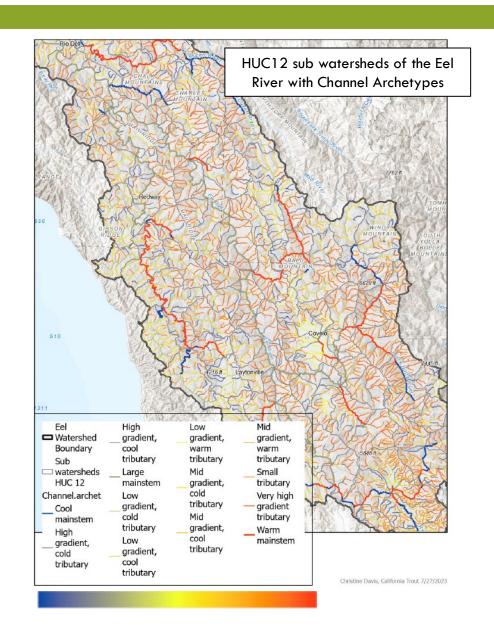


Resident adult



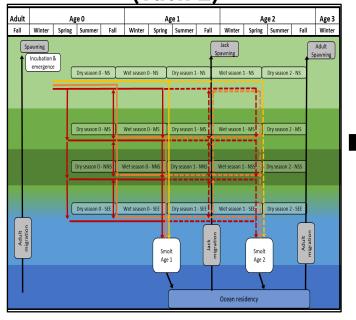
#### Task 2 - Characterizing habitat diversity: "Channel Archetypes"

- "Channel archetypes" are functionally unique due to:
  - geomorphic,
  - hydrologic, and
  - thermal properties.
- · Groupings were developed based on:
  - drainage area,
  - slope,
  - temperature regime
- Channel archetypes differ in:
  - species and life history tactics they might be able to support
  - possible restoration actions



#### Task 3 – Identify Restoration & Conservation Actions

# Species Conceptual Models (Task 2)



#### **Tiered Goals & Objectives**

- Systematic identification of goals, objectives & actions to achieve them
- Learn from other programs:
  - Trinity River IAP
  - Klamath River IFRMP
  - Coos Basin SAP

#### **Existing Eel River Plans**



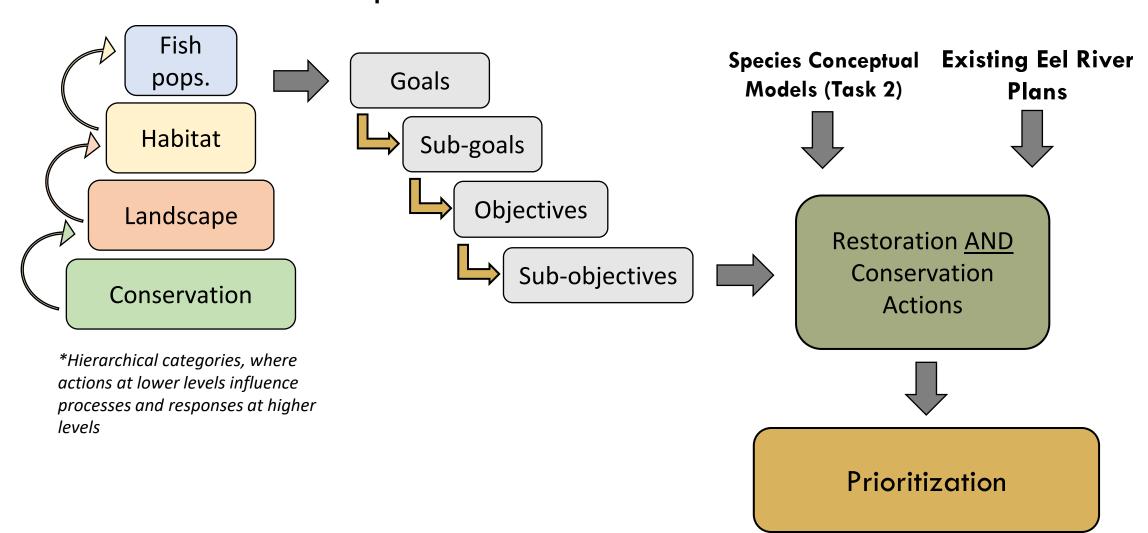
- NMFS Recovery Plans
- SHaRP
- Eel River Action Plan
- RVIT Rest. Strategy



List of Restoration & Conservation Actions

#### Task 3 - Tiered Goals and Objectives to Identify Actions (overview)

#### **Tiered Goals and Objectives**



### Task 3 – Tiered Goals & Objectives to identify actions (example)

Category	Goals
Populations	Achieve naturally self-sustaining native fish populations
Habitats	Improve quantity, complexity and diversity of habitats within the stream corridor
Landscapes	Protect, enhance, and restore intrinsic physical watershed processes that create and maintain complex channel morphology and regulate habitat connectivity.
Conservation	Protect the Eel River's natural resources through land conservation actions that promote habitat connectivity and resiliency of focal species

#### Sub-goals

- 2.1 Increase quantity of suitable habitat for focal species and life stages
- 2.2 Increase qualit and complexity of key habitats
- 2.3 Restore connectivity between habitats
- 2.4 Increase and improve estuarine habitat
- 2.5 Foster productive riverine food webs that support growth of native fishes

#### **Objectives**

- **2.3.1 Lateral Connectivity** Improve juveniles access to access productive rearing habitats in sidechannels and floodplains
- **2.3.2 Longitudinal connectivity** *Improve* connectivity between habitats in mainstems, tributary, and esutarine reaches.

#### **Sub-Objectives**

Remove barriers to upstream passage of migratory adults

Remove barriers to movement by juveniles between diverse rearing habitats



**Actions list** 

#### Task 3 - Outcome: Restoration & Conservation Actions List

Action Categories		
Fish passage improvement		
Instream habitat restoration		
Off-channel habitat & connectivity		
Estuary Habitat Restoration		
Instream flow protection &		
enhancement		
Water quality improvement		
Riparian habitat restoration		
Upslope sediment management		
Non-native species & pathogens		
control		
Land conservation		
Watershed education		

Action	Definition	Channel Archetypes
Large dam removal	Remove Scott Dam to River	2 (cool mainstem)
Small dam removal	Remove or increase pa	all
Culvert removal or modification	Upgrade culverts that with bridges or stream	0 and 1.1, 1.2, 1.3
Tide gate removal or modification	Remove barrier tide gasside-hinge tide gate of	estuary
Stream crossing mitigation	Build bridges or install shallow riffles	all
Facilitate passage from mainstems into cool tributaries	Remove excess sedim channels, or install featfacililtate juvenile & a tributary habitats and	1.1, 1.2, 1.3 (cold and cool focus)



#### Task 4 - Prioritization Framework

#### What is a Prioritization Framework?

- A process that evaluates and prioritizes restoration and conservation actions with the goal of efficiently and effectively recovering the watershed.
- The prioritization process should:
  - Utilize an ecosystem-based approach
  - Integrate and build off existing restoration programs and priorities
  - Be informed by technical advisors and community members
  - Be adaptive and revisable over time.

## Task 4 - Prioritization: Fundamental Questions and Concepts

Questions and Concepts	Thought Process
Restoration and Conservation	Both are required for Eel Restoration
Resolution in restoration and	Broad Actions – Needed throughout the watershed
conservation prioritization — action	<u>Specific Actions</u> – Big picture projects for
level resolution and spatial resolution?	maximum impact
	<u>Spatial Resolution</u> – Where?
Modeling and expert opinion approaches	What tools should and can be used?

#### Task 4 - Prioritization: Restoration and conservation scale

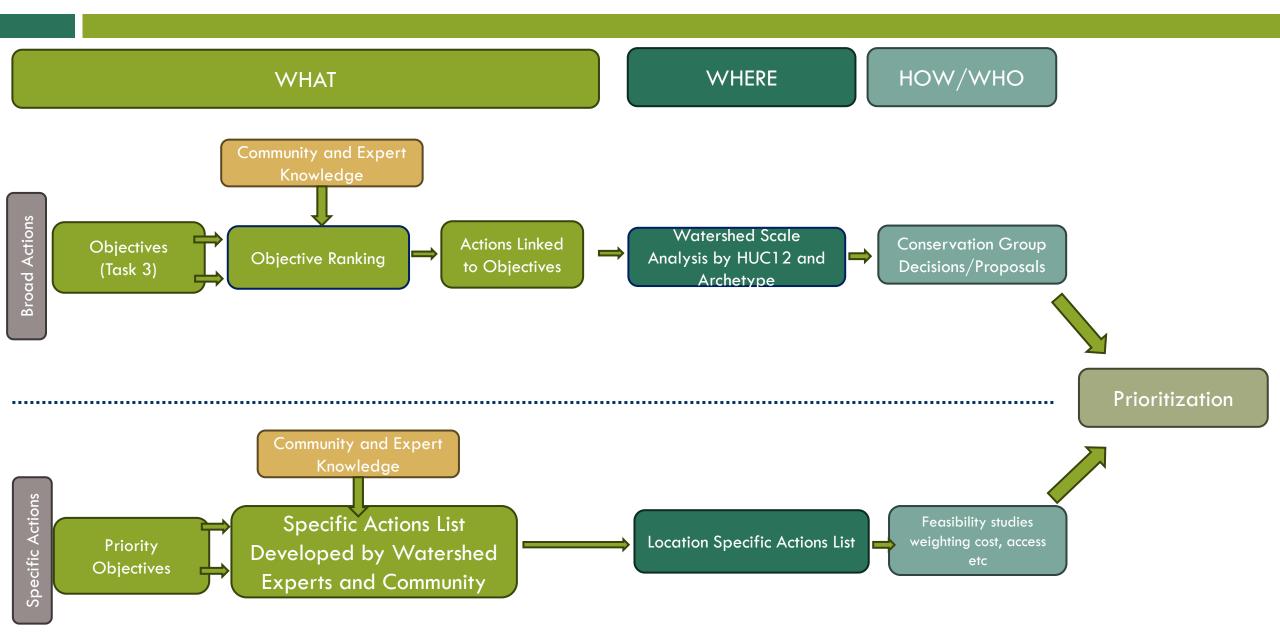
Broad Actions: Actions that could be beneficial across the Eel River watershed, but need spatial prioritization



<u>Specific Actions:</u> Specific projects know by experts that will have a strong benefit on program goals



## Task 4 — Prioritization: Draft Expert Opinion Approach



#### What's next?

#### PLAN Document (Phase 1)

- Progress next Tasks 4, 5, 6, 7
- Draft plan ready for review in March 2024
- •Next Eel River Forum meeting in early 2024 to discuss the process for review of the draft plan.

# PROGRAM administration (Phase 2)

- Acquire funding for Phase 2
- Begin the administrative Eel Program
- Continued monitoring and integrated monitoring plan
- Prioritization

#### **Community announcements**

- CalTrout, Eel Dams update –
   Darren Mierau
- Wildlands Conservancy –
   Luke Farmer and Emily Allee
- ERWIG Isaac Mikus
- Save California Salmon Nikcole Whipple
- Friends of the Eel Alicia Hamman
- CalTrout, Bull Creek Christine
   Davis

#### SAVE THE DATE

Great Redwood Trail
Community Event

Family-Friendly Activities • Trail Planning Info • Speaker Presentations

Saturday, October 14th, 2023 11:00 am - 3:00 pm at the Dyerville Overlook

Is your organization interested in tabling at the event?

Contact foer@eelriver.org









#### **Eel River Dams Update**

PG&E FERC License Expired April 2022

PG&E is developing a License Surrender Application and Decommissioning Plan

- Nov 2023 Initial Draft
- May 2024 Revised Draft
- Jan 2025 Final Plan submitted to FERC

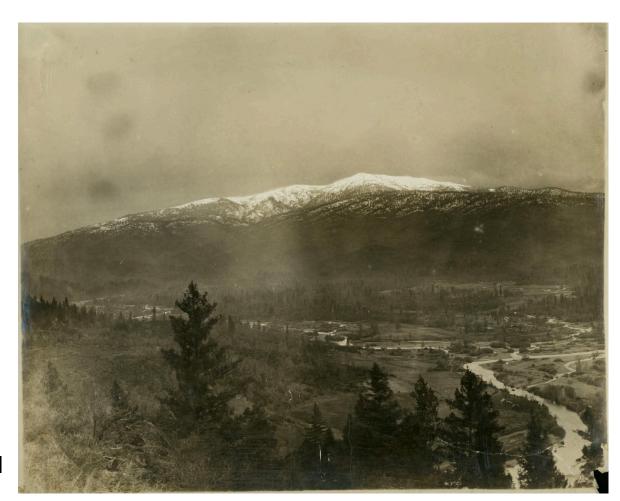
"PG&E's decommissioning plan will include the removal of in water facilities such that no feature will continue to impound water and the natural flow of the river will occur."

CalTrout and Partners are developing proposals for Feasibility Studies (Phase 3) to CDFW and SCC

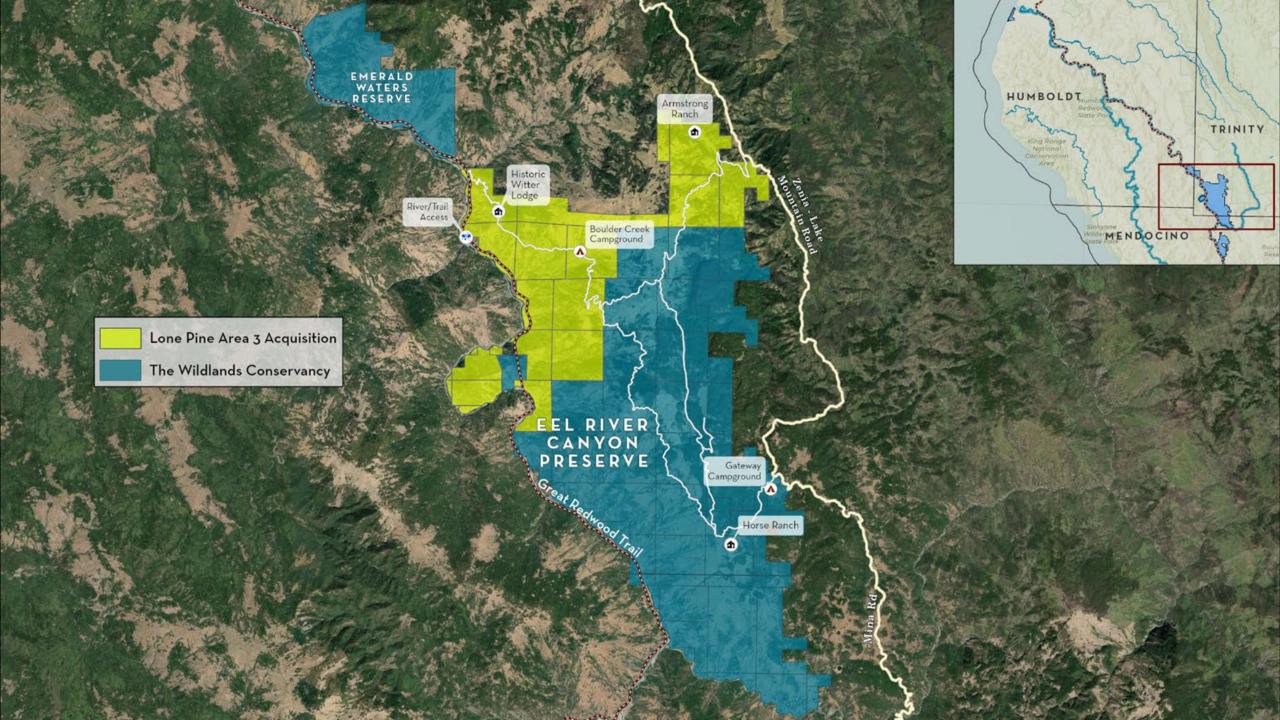
\*Inform decommissioning and dams removal

Sonoma Water DWR Grant

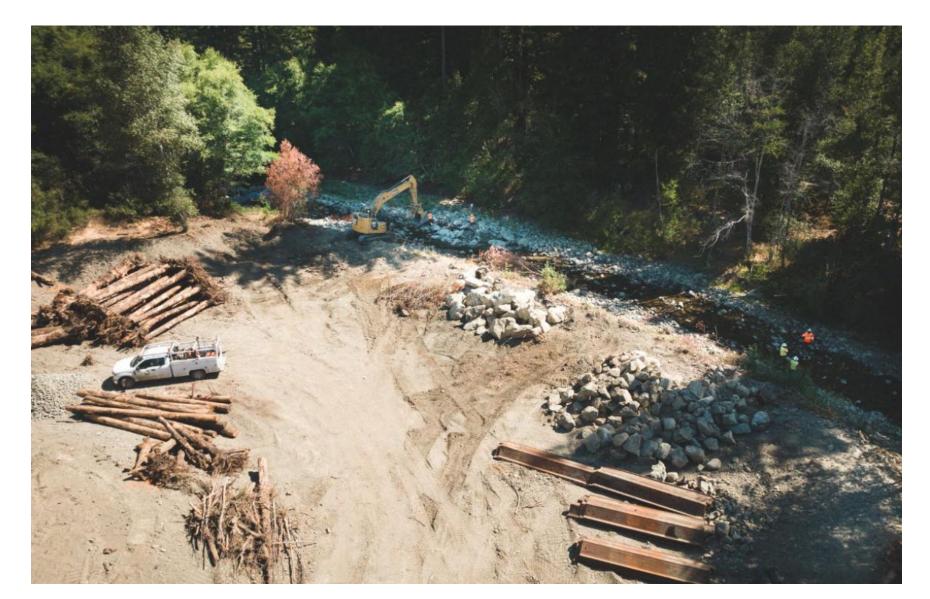
 \*Organize RRWU, advance engineering for a potential diversion facility, and explore water resiliency alternatives in Potter Valley.







## Community announcements - Bull Creek Restoration





SCAN FOR MORE INFO:

#### A word from the fish...



# Thank you! <u>ERF@Caltrout.org</u> for more information



#### Important links

Link to sign up to the Eel River Forum mailing list: <a href="http://eepurl.com/dL6qUs">http://eepurl.com/dL6qUs</a>

Eel River Forum general email: <a href="mailto:ERF@caltrout.org">ERF@caltrout.org</a>

CalTrout Eel Project site: <u>Eel River Restoration Plan | California Trout (caltrout.org)</u>

CalTrout Eel River Forum past meeting slides: Eel River Forum | California Trout (caltrout.org)

CNRA 30x30: Resources | California Nature

Terry Torgerson cartoon: If the Eel Could Talk - Redheaded Blackbelt (kymkemp.com)