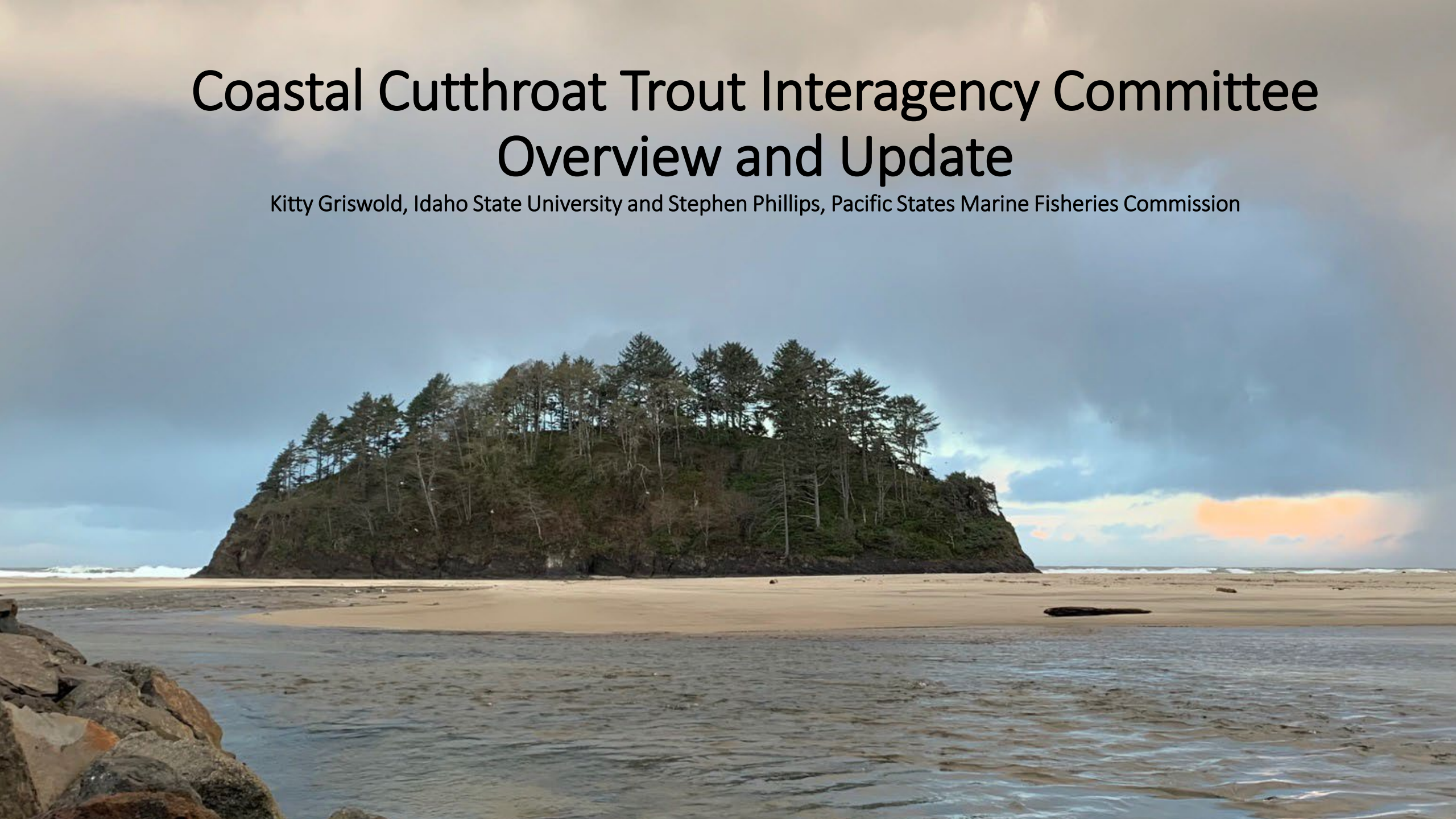


# Coastal Cutthroat Trout Interagency Committee Overview and Update

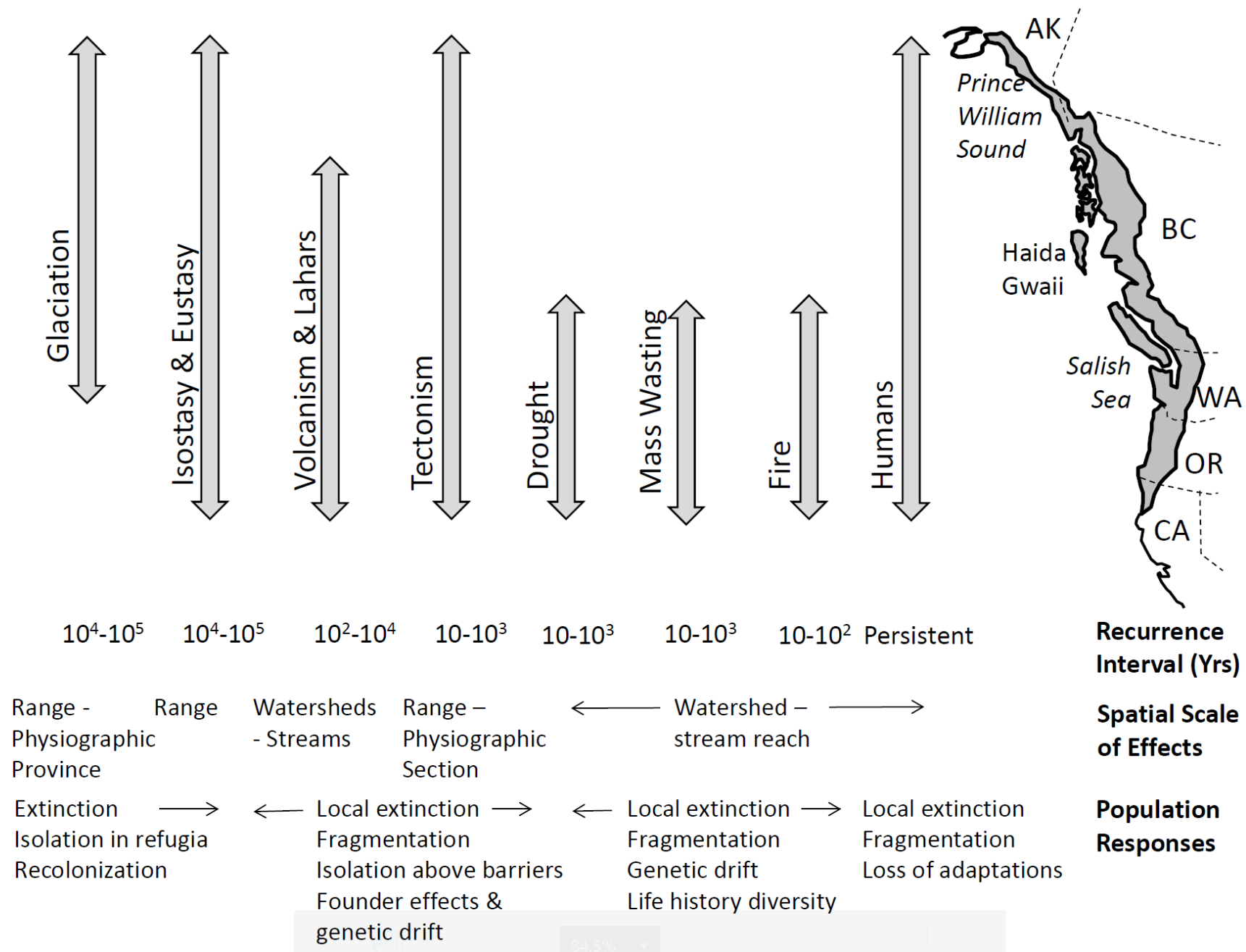
Kitty Griswold, Idaho State University and Stephen Phillips, Pacific States Marine Fisheries Commission



# Coastal Cutthroat Trout are a unique and important species of Cutthroat Trout



- Vast latitudinal gradient with marked variation in landscape history
- Coastal fog, rainforest, access to marine environments
- Watershed and sub-watersheds are key drivers of diversity in CCT



(Williams et al. 2019, chapter in Trotter et al., 2019)

# Life History variation is a key element of CCT diversity

Coastal Cutthroat Trout spawn in small freshwater streams, need clean cold water, small gravel and protected places to build their redds, and off-channel habitats to grow.

Biologists have lumped their complex migratory life history into four categories:

- Resident (above and below waterfalls)
- River migrants
- Lake form
- “Sea-run” marine migrants



Trout images © Joseph R. Tomelleri



Photo courtesy Gordon Reeves



Spawning adults return to home streams where they build their nests in areas with small gravel and cold clear water. Young fish (including parr) need off-channel areas for rearing, wood (instream and riparian), and deep pools. Coastal fog, PNW rainforests are key elements of their habitat needs.



Trout images © Joseph R. Tomelleri

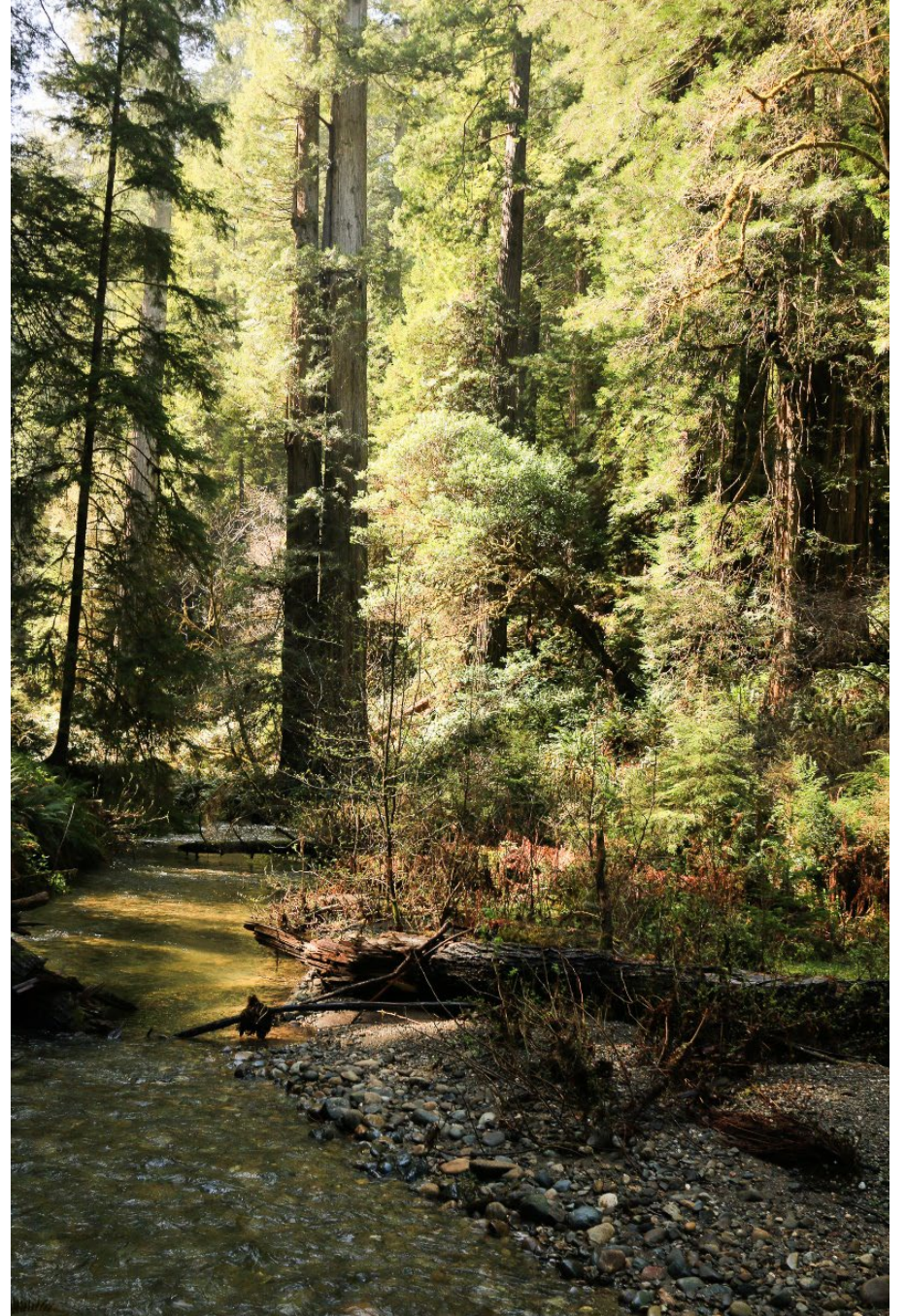
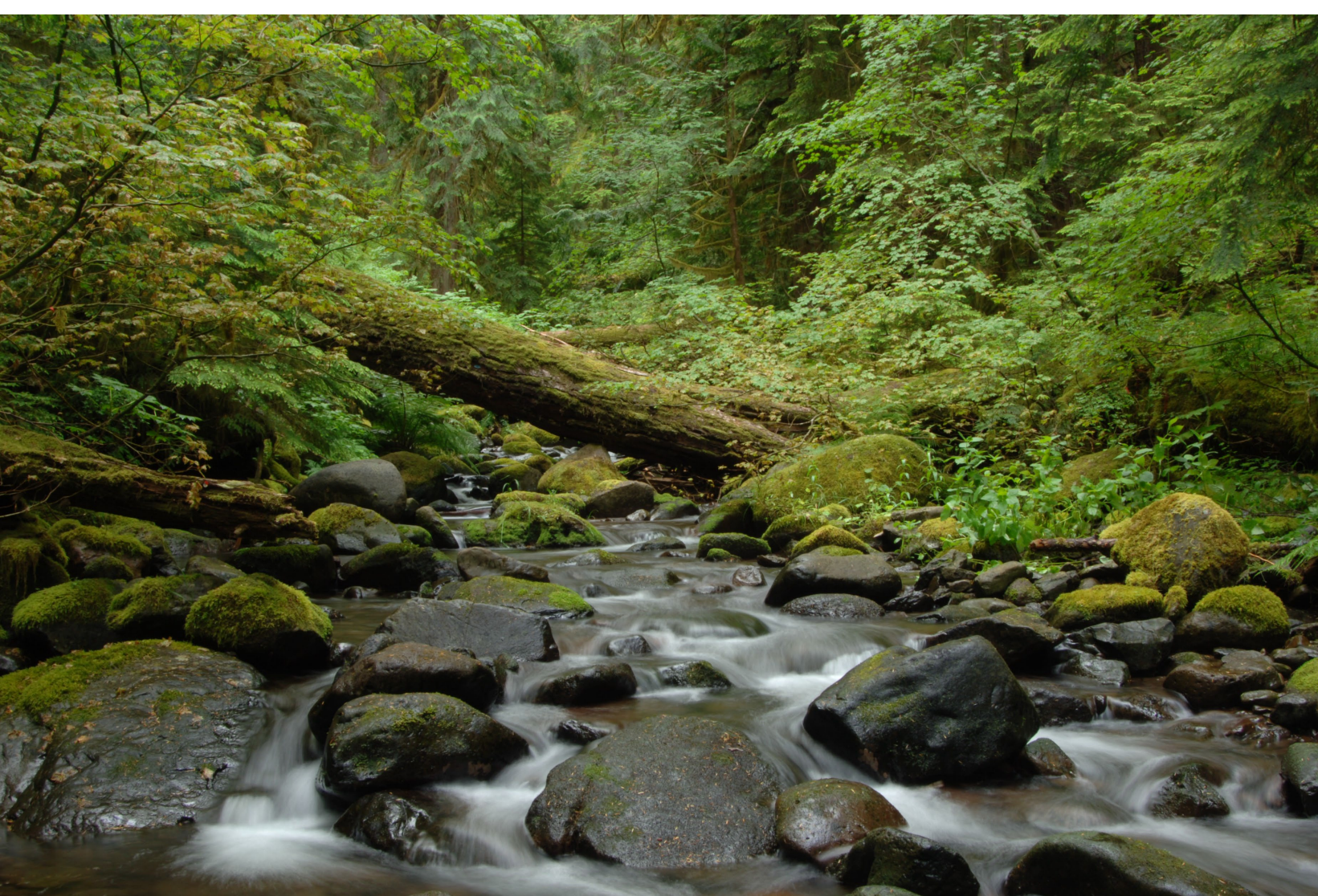


Photo Brett Holycross



© Joseph R. Tomelleri

Resident Coastal Cutthroat Trout can spend their entire life history in freshwater.



ADFG photo, courtesy Roger Harding



© Joseph R. Tomelleri



Trout images © Joseph R. Tomelleri





- Sea-run CCT enter marine habitat at age 2 or 3
- Undergo full transition to smolts
- Follow shorelines
- Opportunistically follow tides
- Duration of marine occupancy varies
- Large, reproductively successful, high fecundity



© Joseph R. Tomelleri

# Increased awareness of the need to improve coordination and information



- Non-commercial, falling through the cracks...
- Great deal of uncertainty
- Lack of data

Feature

## **Pacific Salmon at the Crossroads: Stocks at Risk from California, Oregon, Idaho, and Washington**

Willa Nehlsen, Jack E. Williams, and James A. Lichatowich

### ABSTRACT

The American Fisheries Society herein provides a list of depleted Pacific salmon, steelhead, and sea-run cutthroat stocks from California, Oregon, Idaho, and Washington, to accompany the list of rare inland fishes reported by Williams et al. (1989). The list includes 214 native naturally-spawning stocks: 101 at high risk of extinction, 58 at moderate risk of extinction, 34 of special concern, and one classified as threatened under the Endangered Species Act of 1973 and as endangered by the state of California. The decline in native salmon, steelhead, and sea-run cutthroat populations has resulted from habitat loss and damage, and inadequate passage and flows caused by hydropower, agriculture, logging, and other developments; overfishing, primarily of weaker stocks in mixed-stock fisheries; and negative interactions with other fishes, including nonnative hatchery salmon and steelhead. While some attempts at remedying these threats have been made, they have not been enough to prevent the broad decline of stocks along the West Coast. A new paradigm that advances habitat restoration and ecosystem function rather than hatchery production is needed for many of these stocks to survive and prosper into the next century.

(Fisheries, 1991)



## Coastal Cutthroat Trout Interagency Committee

*"Working to guide the conservation and restoration of coastal cutthroat trout throughout their native range"*

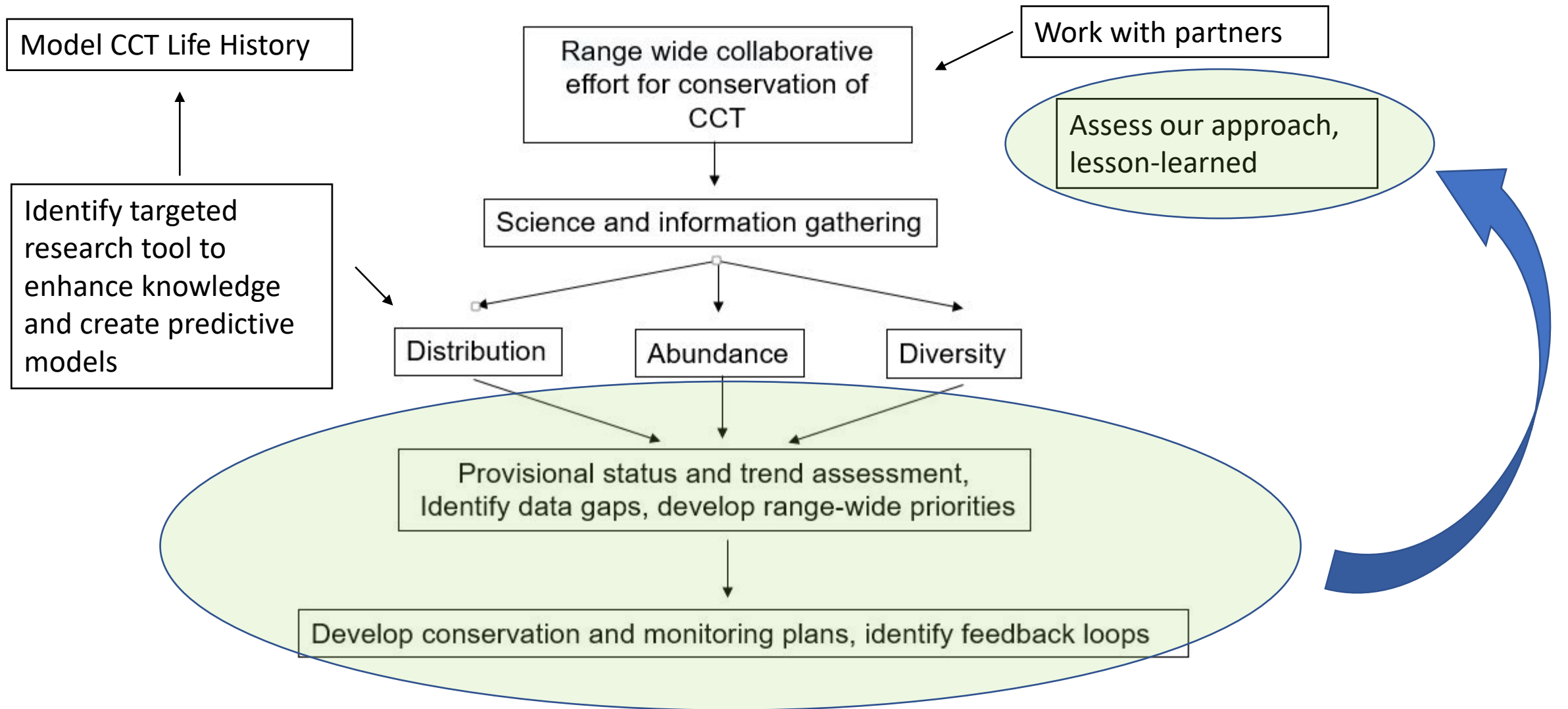


- State, federal, tribal agencies in partnership (PSMFC, USFWS, States of California, Oregon, Washington, Alaska, NWIFC, USGS, USFS, BLM, British Columbia)
- Modeled after Brook Trout Initiative and Yellowstone Cutthroat Trout and Redband trout working groups
- Develop a consistent framework to share information and conserve CCT throughout their native range (Griswold, 2006, Finn et al. 2007)



WESTERN  
NATIVE  
TROUT  
INITIATIVE

# Original Concept Map developed by CCTIC

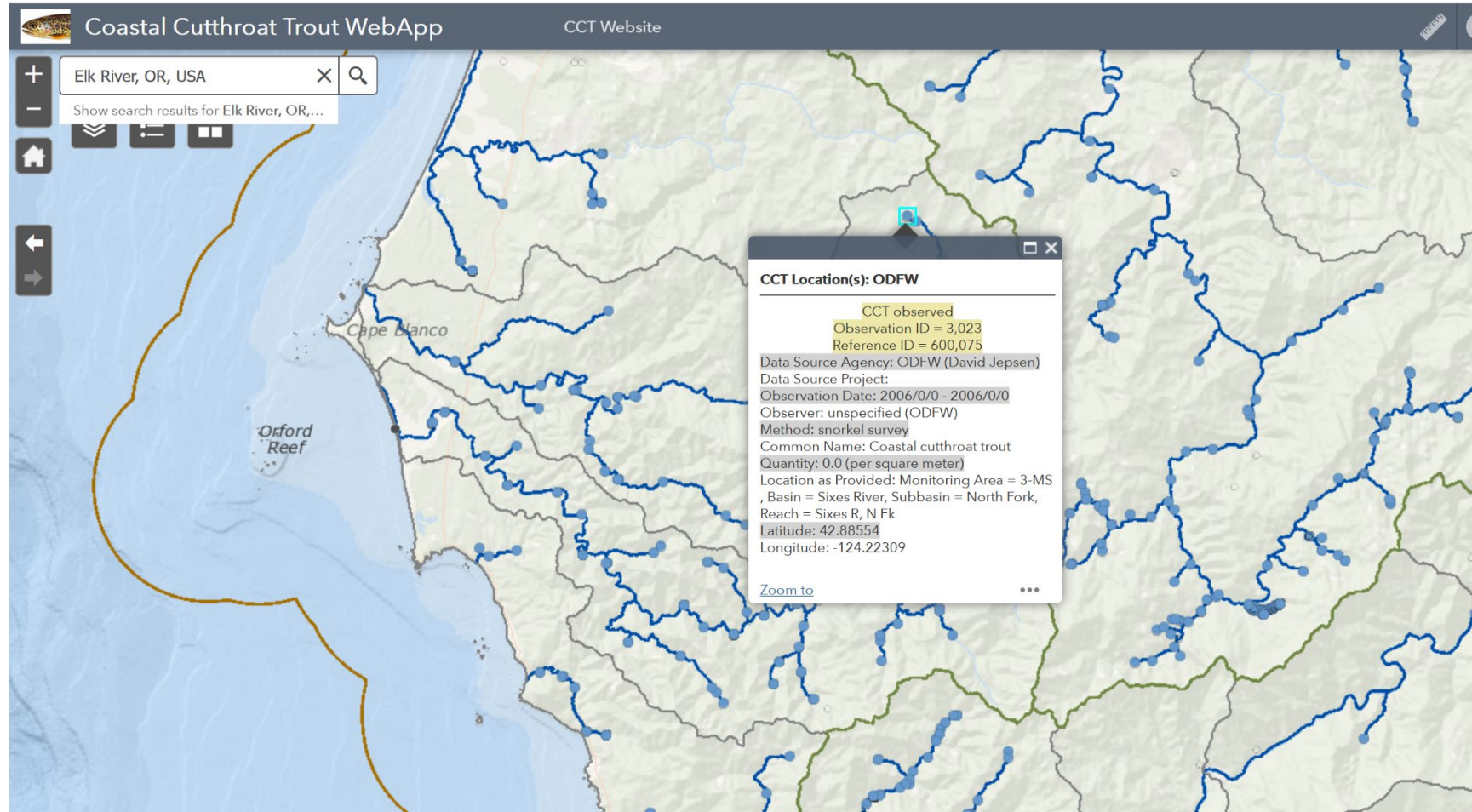


# Coastal Cutthroat Trout Interagency Committee Featured Activities

- Science Workshop, Monitoring Workshop (2006 - 2007)
- Symposiums (stand alone and associated with AFS National and regional meetings) (2006 – present)
- Creating synergy to support research and collaboration that focus on information gaps- be good partners and data stewards
- Data base of documented occurrence, new data-driven range map (2008 – present)
- WNTI strategic planning; CCT status updates
- Contribution to USFWS efforts (Federal register)
- Public outreach partnership with Trout unlimited and WNTI

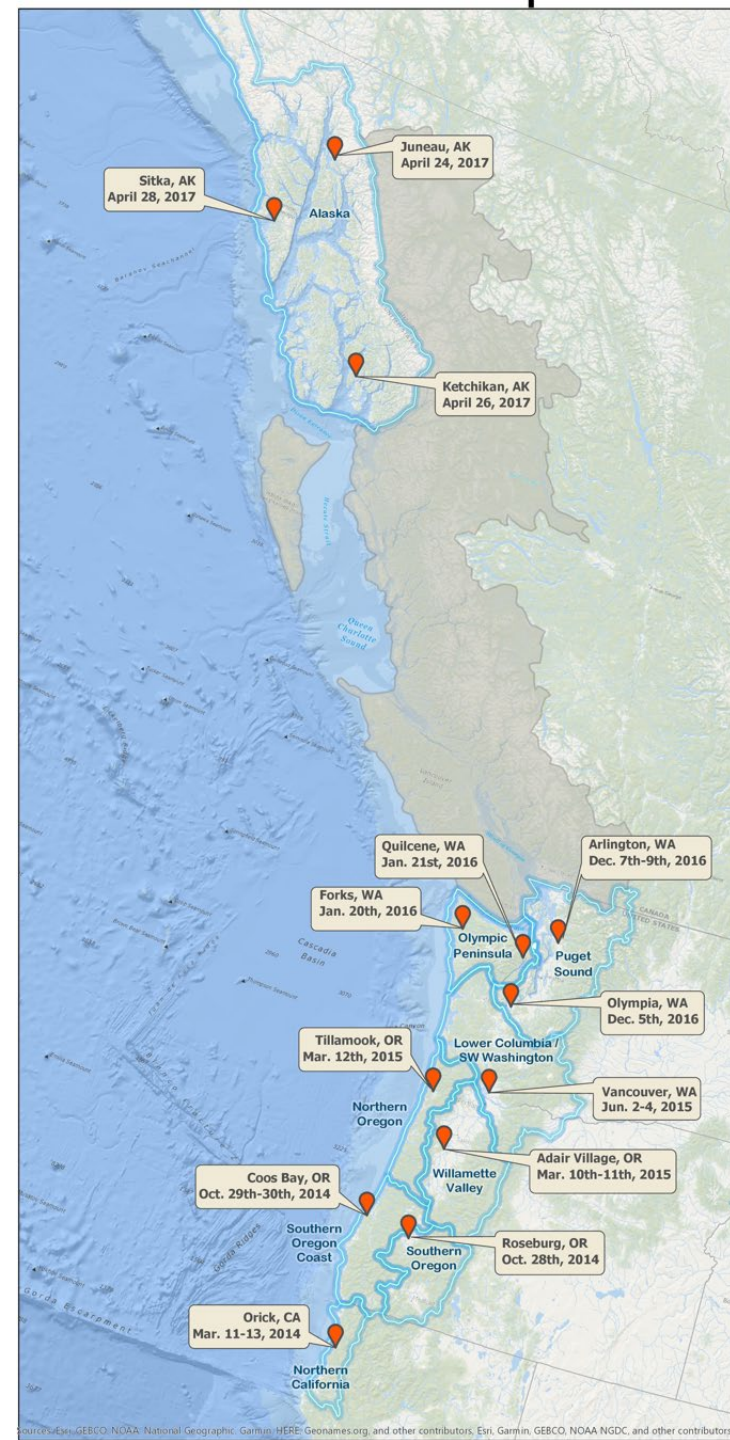
# Data collection (N = 100K+)

Go to <http://www.coastalcutthroattrout.org/> to access CCT WebApp to preview data

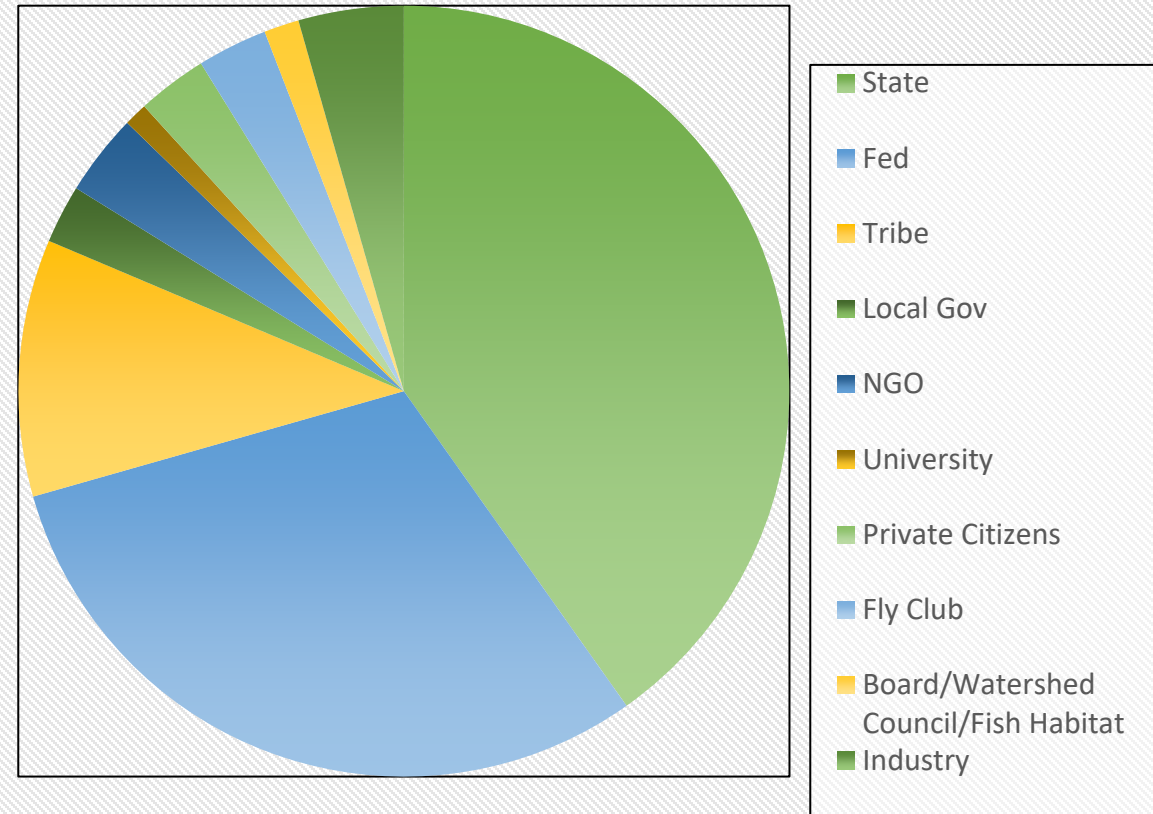


- Observation or survey tied to blue distribution lines.
- Maintain elements of survey data; agency, data source, year, observer, method, etc.
- Natural Barriers (on distribution)
- Professional judgement

(Griswold, K., Holycross, B., Hare, V., & Sherman, K. (2019). Coastal Cutthroat Trout Locations (Version 1.1) [Data set]. Pacific States Marine Fisheries Commission. <https://doi.org/10.7923/Z5ZN-7219> ) PUBLICALLY AVAILABLE VERSION

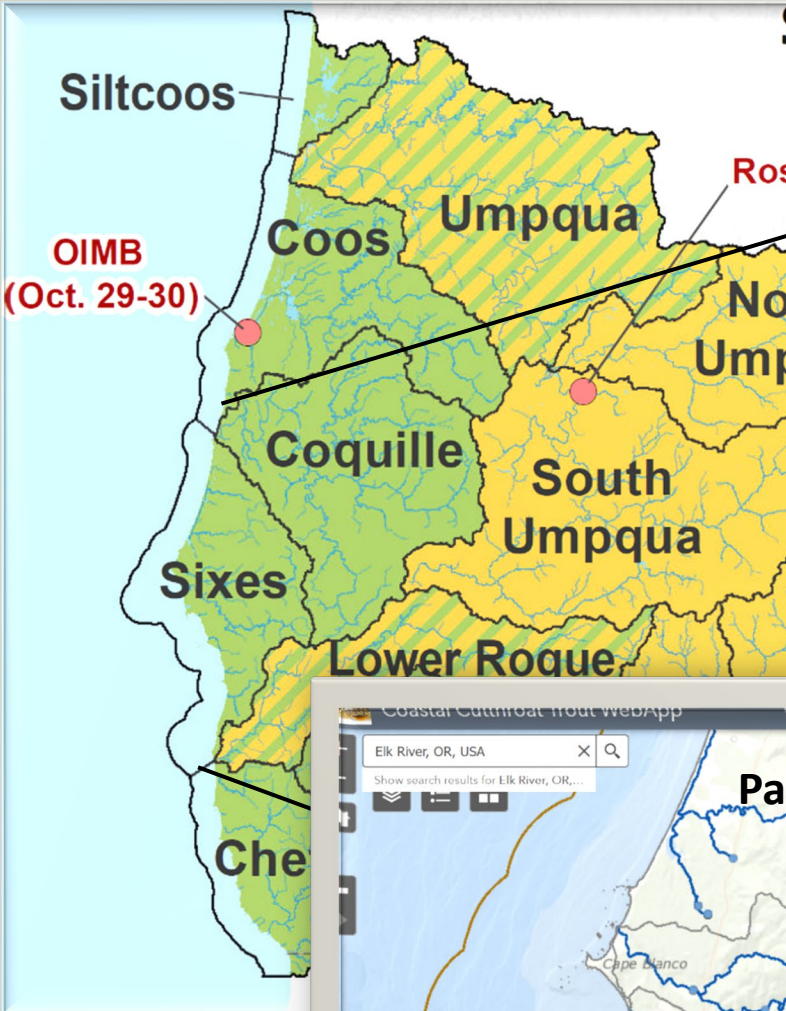


## Assessment Participants (N = 204)

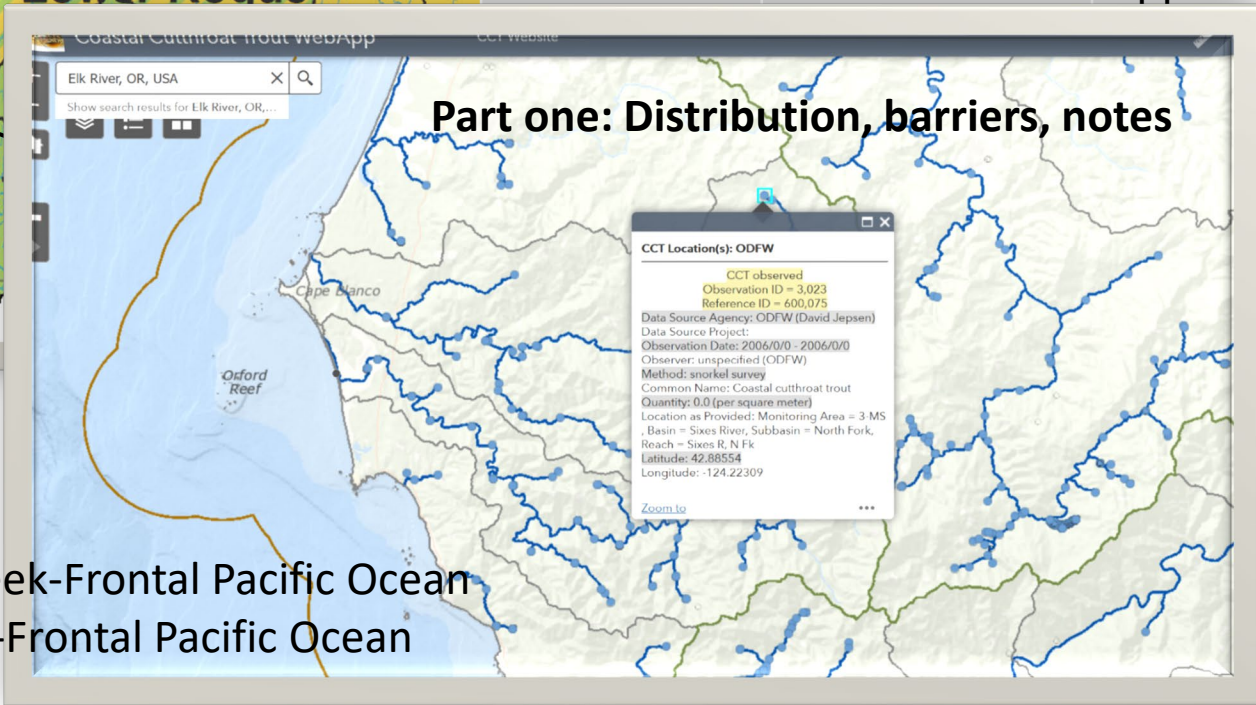


- Thirteen in-person workshops several multi-day (N =45 workshop days), 94 entities participated, it took us three years(!)
- Identified 44,000 km of streams with documented occurrence of CCT
- Watershed and sub-watershed scale- balance between scope and detail

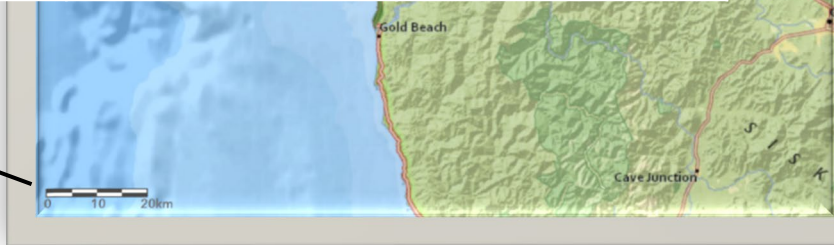
# Southern Oregon CCT Workshop Locations



Stream	Limiting Factor			
Elk River	Fragmentation	Bank stability upper reaches	Mainstem H2O Temp	Legacy Forestry practices
Sixes River	Fragmentation	Bank stability upper reaches	Mainstem H2O Temp	Legacy Forestry practices
		ability reaches	Mainstem H2O Temp	Legacy Forestry practices
		ability reaches	Mainstem H2O Temp	Legacy Forestry practices



- Elk River
- Sixes River
- Euchre Creek-Frontal Pacific Ocean
- New River-Frontal Pacific Ocean





# CCT California Workshop Results Relative Habitat Quality

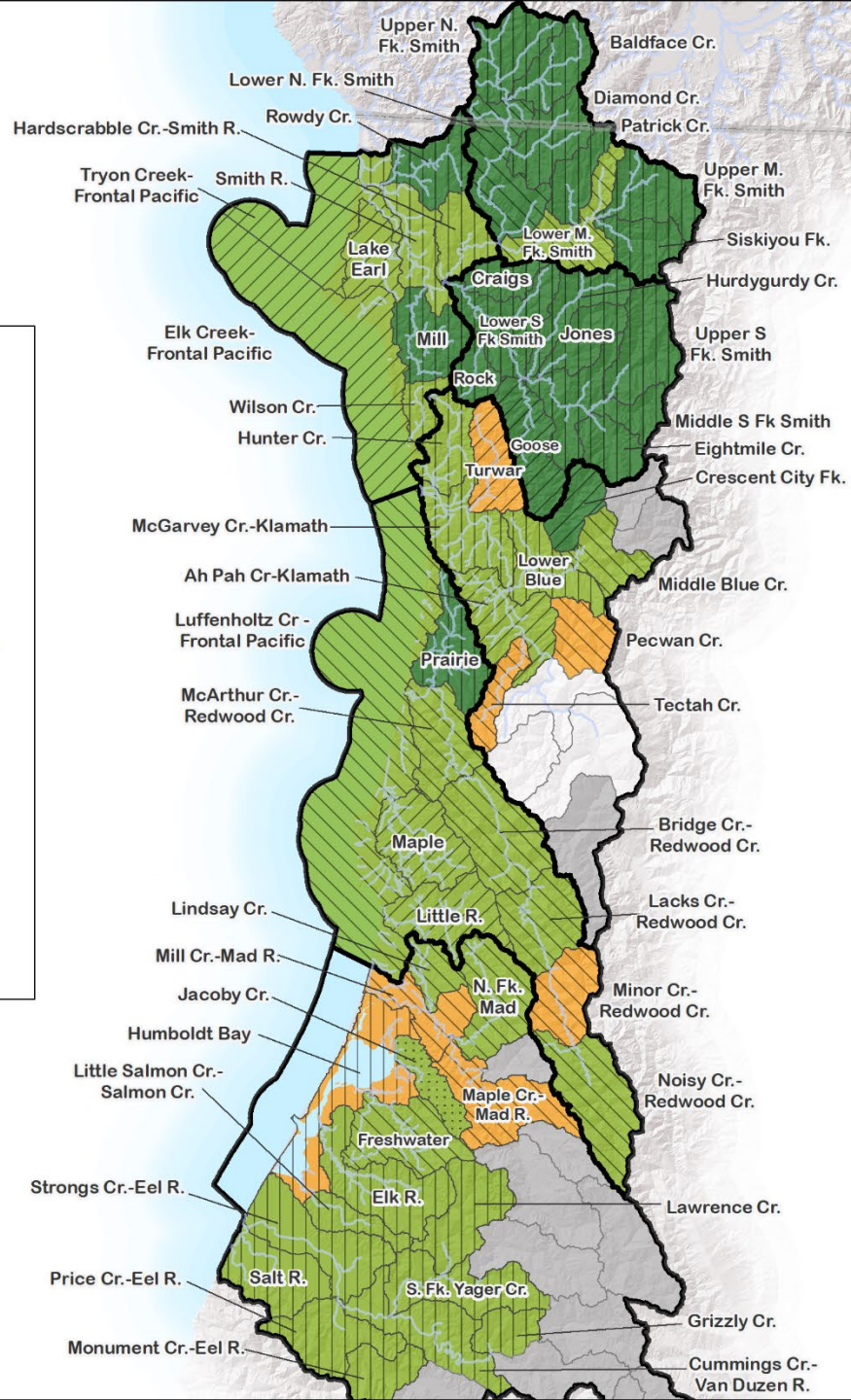
Using your best professional judgement provide a rating of the CCT habitat in the 6th field HUC.

**Relative Habitat Quality**

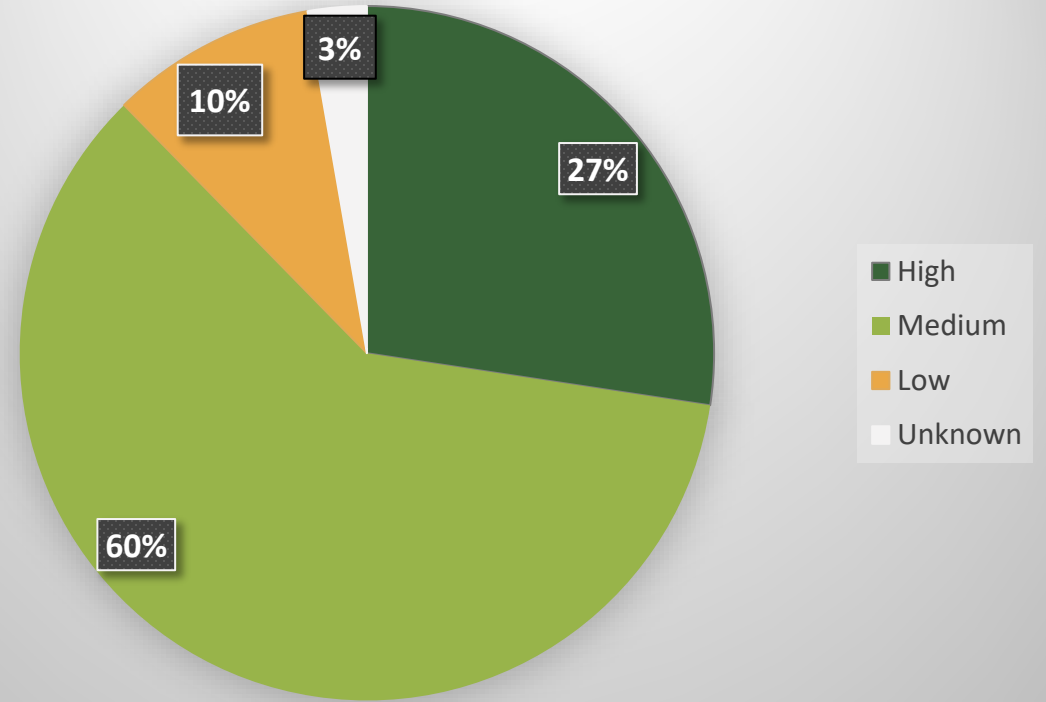
- Excellent to Good
- Medium
- Poor
- Not applicable
- Unknown

**Information Source**

- Highest level of reliability
- High level of reliability
- Professional opinion
- Undocumented professional observation
- N/A
- Coastal Cutthroat Trout Distribution
- Workshop Subunits



## Relative Habitat Health



# CCT California Workshop Results

## Relative Population Health

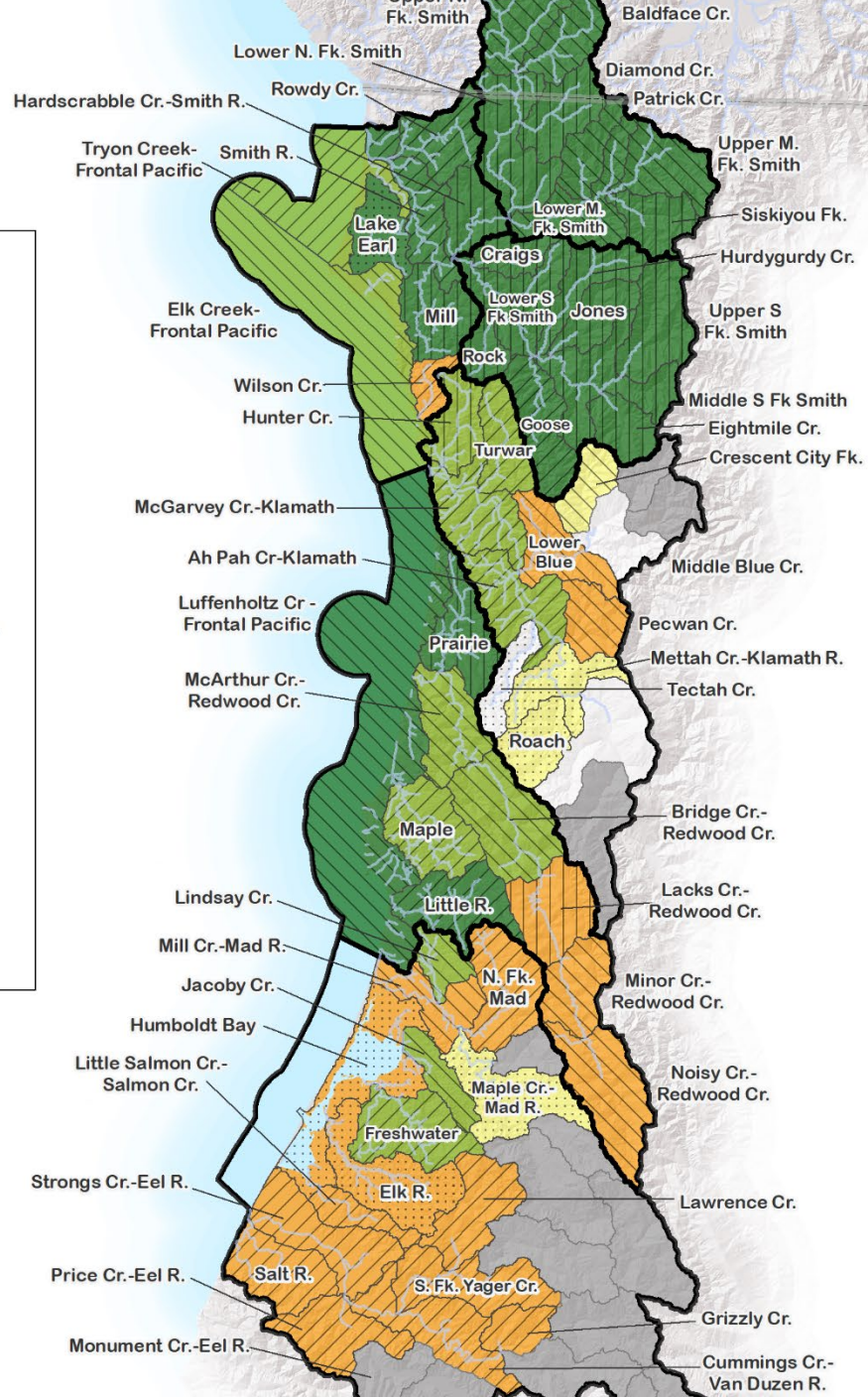
Using your best professional opinion identify the level of CCT abundance and viability.

### Relative Population Health

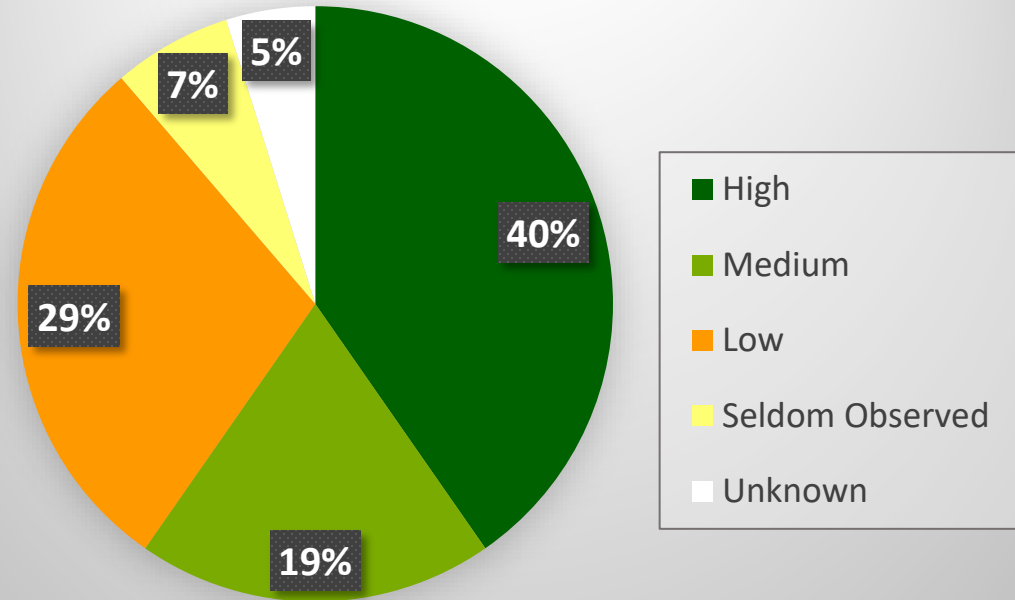
- High
- Medium
- Low
- Seldom Observed
- Not Applicable
- Unknown

### Information Source

- Highest level of reliability
- High level of reliability
- Professional opinion
- Undocumented professional observation
- N/A
- Coastal Cutthroat Trout Distribution
- Workshop Subunits

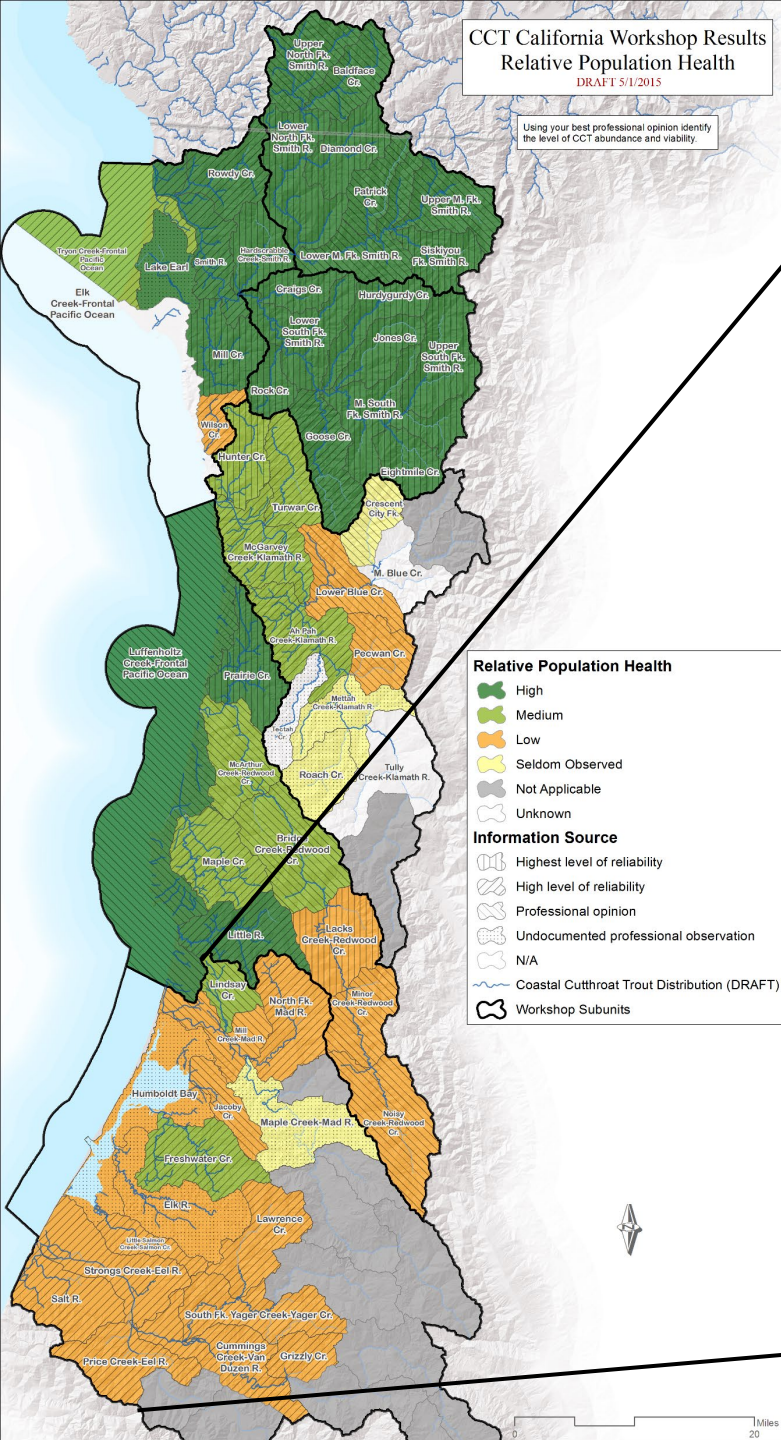


### Relative Population Health



**CCT California Workshop Results**  
**Relative Population Health**  
 DRAFT 5/1/2015

Using your best professional opinion identify the level of CCT abundance and viability.



Detailed comments associated with assessment questions are available at HUC level 6, Conservation Actions are the example shown. All available to CDFW.

HUC12	CCT_SubUnit	Name	ConservationActions
180101020405	Mad/Humboldt Bay/Lower Eel	North Fork Mad River	replacing culverts to address fish passage, upgrading roads to address sediment. channelization, levees, dewatering, LWD projects planned, instream cover
180101020406	Mad/Humboldt Bay/Lower Eel	Maple Creek-Mad River	limited presence in this subwatershed. copy other mainstem issues
180101020407	Mad/Humboldt Bay/Lower Eel	Lindsay Creek	still has life history diversity - most likely best cct huc6 in the mad subbasin
180101020408	Mad/Humboldt Bay/Lower Eel	Mill Creek-Mad River	low to medium habquality, flow, channelization, LWD, cover and habitat, fencing...all but diversions and angl
180101020601	Mad/Humboldt Bay/Lower Eel	Jacoby Creek	road upgrades, morrison gulch was done recently,
180101020602	Mad/Humboldt Bay/Lower Eel	Freshwater Creek	road upgrades, decommissioning, stream crossings for passage, dikes and levees, recent off channel habitat
180101020603	Mad/Humboldt Bay/Lower Eel	Elk River	medium to low (TW), road upgrades, decommissioning, lack of forest, lower reaches of streams are more im
180101020604	Mad/Humboldt Bay/Lower Eel	Little Salmon Creek-Salmon Creek	upper wshed is in good condition with headwaters reserve, lower reaches are impacted, likewise HW reserve
180101020605	Mad/Humboldt Bay/Lower Eel	Humboldt Bay	exceptional potential for seeding basin toxics at the pulp mill are a risk, note other comments about low reaches, high coliforms in bay, water quality
180101050802	Mad/Humboldt Bay/Lower Eel	Lawrence Creek	levees, lack of large riparian, connectivity, tide gates, transition zone between rivers and bay is a desert and r
180101050803	Mad/Humboldt Bay/Lower Eel	South Fork Yager Creek-Yager Creek	estuuary.
180101050904	Mad/Humboldt Bay/Lower Eel	Grizzly Creek	Sediment tranport to streams (threat), sediment reduction projects ongoing/planned. Water use & stream m
180101050906	Mad/Humboldt Bay/Lower Eel	Cummings Creek-Van Duzen River	threats. Pool depth and instream cover, impaired spawning habitat (threats), work is ongoing, but more need
180101051003	Mad/Humboldt Bay/Lower Eel	Price Creek-Eel River	crossing/passage issues.
180101051101	Mad/Humboldt Bay/Lower Eel	Salt River	Sediment tranport to streams (threat), sediment reduction projects ongoing/planned. Water use & stream m
180101051102	Mad/Humboldt Bay/Lower Eel	Strongs Creek-Eel River	threats. Pool depth and instream cover, impaired spawning habitat (threats), work is ongoing, but more need

# Issues identified and updated

- Loss of habitat within and between watersheds, loss of connected habitat for migration, and estuary loss.
- Climate-related issues including low flows, increased extreme events and climate regime shifts, unanticipated events.
- Biological factors lack of understanding regarding hybridization with RBT, competition with non-native fish whose spread is enabled by climate impacts.
- Continued concern about the sea run life history of CCT
- Human factors: lack of knowledge, triage, reduced public engagement including interest in CCT fishery
- **There needs to be a shift in how we think about CCT and how we engage the public (CCT Symposium panel, 2018)**

**DIET** Coastal cutthroat trout diet varies greatly, depending on their current habitat and life stage. In small streams, they are primarily drift feeders targeting insects. In lakes and rivers, they eat insects and other small invertebrates, the eggs of other salmon and trout, and small fish. While cruising marine shorelines or edgewise beds, they target shrimp or forage fish such as sand lance, herring, and stickleback. In large lakes they may feed on kokanee.

**SIZE** Coastal cutthroat trout may reach maturity at just 5–6 inches, but in some circumstances grow to be over 30 inches long. In Alaskan lakes they can reach well over 20 inches and live up to 18 years! Sea-run coastal cutthroat trout can also grow quite large, due to their rich marine-based diet.

# Get to Know Your Native Trout

# COASTAL CUTTHROAT TROUT

Common names include Coastal Outthroat Trout, sea-run cutthroat trout, 'cutty', or 'blueback'

*Oncorhynchus clarkii clarkii*

FROM THE GREEK ONCHOS ('HOOK') AND RHYCHOS ('FISH') IN REFERENCE TO THE HOOKED JAW OF MALES IN THE MATING SEASON (THE 'KYPE').

NAMED IN HONOR OF WILLIAM CLARK, WHO DISCOVERED THE FISH IN ENCLAVE RIVER DURING THE LEWIS AND CLARK EXPEDITION.

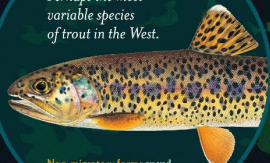
## An Adaptable Fish

Coastal cutthroat trout have adapted to varying conditions over broad expanses of space and time. These opportunistic fish can be found in coastal streams, rivers, lakes and ponds, and marine environments.

### HABITAT

Coastal cutthroat trout spawn in small freshwater streams with high fidelity to their home stream. They are capable of spawning multiple times during their life. Their eggs require cool clean water and small pea-sized gravel, free of silt to ensure oxygen can reach the developing eggs. Young fish need rivers and streams with deep pools, food-producing riffles, ample gravel and wood for cover, and streamside shade from trees and shrubs. Sea-run coastal cutthroat trout require access from headwater streams to healthy estuaries and nearshore habitats, where eelgrass, kelp beds, and other cover types provide shelter.

Perhaps the most variable species of trout in the West.



Non-migratory forms spend their entire lives in small streams, sometimes above waterfalls; they reach maturity at a young age and small size, typically living less than five years. Not usually the target of anglers, these fish contribute to the overall health of the ecosystem and may produce offspring that may migrate to marine waters.

Migratory forms move to large rivers or lakes and, in some cases, undergo a transformation that allows them to tolerate saltwater and enter marine environments for extended periods before returning to their home stream to spawn.

Healthy populations of coastal cutthroat trout display a range of life history strategies and migratory behaviors. For populations to remain healthy they need access to healthy and connected habitats.



The dorsal section can develop a gold or copper color.

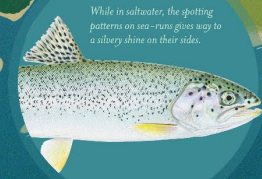
The gill plate can be iridescent.

Typically, fish are heavily spotted with a white or faint golden belly, and a pink hue on their sides.

### COLOR

Appearance can vary by location and season. The name 'cutthroat' comes from the characteristic pink to orange slash usually present under both sides of the jaw that typically extend beyond the eyes.

While in saltwater, the spotting patterns on sea-runs gives away to a silvery shine on their sides.



## They're a North American Treasure!

## A Species in Time

Coastal cutthroat trout are one of four major lineages of cutthroat trout that split off from a common ancestor millions of years ago. Their distribution overlaps the temperate coastal rainforests of the Pacific Northwest, spanning from Prince William Sound, Alaska to Eel River, California. In coastal watersheds, cutthroat trout can adopt a sea-run form, migrating from freshwater to marine habitats. This unique trout has adapted to a dynamic environment shaped by glaciers, volcanic activity, and shifts in climate.

## Threats

Coastal cutthroat trout currently occupy most of their historical range, but their habitat has been lost or degraded in many areas due to land use and development, roads, and fish passage barriers. Fishery impacts, impaired water quality, and barriers that bar their migration routes are some of the greatest threats coastal cutthroat trout face, and the impacts can be cumulative. Sea-run populations are particularly vulnerable to these impacts.

Climate change and its impacts on rivers and streams are an additional threat to coastal cutthroat trout.

The long-term persistence of coastal cutthroat trout depends upon continued, strategic conservation efforts and improving our understanding of this complex and fascinating animal.



**Don't forget!** Check with your local state fish and game agencies on current regulations. They provide tremendous resources for fishing information.



This poster is funded by the Western Native Trout Initiative, the Pacific States Marine Fisheries Commission, and Trout Unlimited. For more information, please go to [www.westernnativetrout.org/coastalcutthroat](http://www.westernnativetrout.org/coastalcutthroat) or [www.coastalcutthroat.org](http://www.coastalcutthroat.org)

Fish Illustrations © Joseph R. Tomelton  
Map data sources: ESRI, USGS, NOAA

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# Thank you!



**Idaho State University**

