Coastal Cutthroat Trout Assessment in the Continental United States

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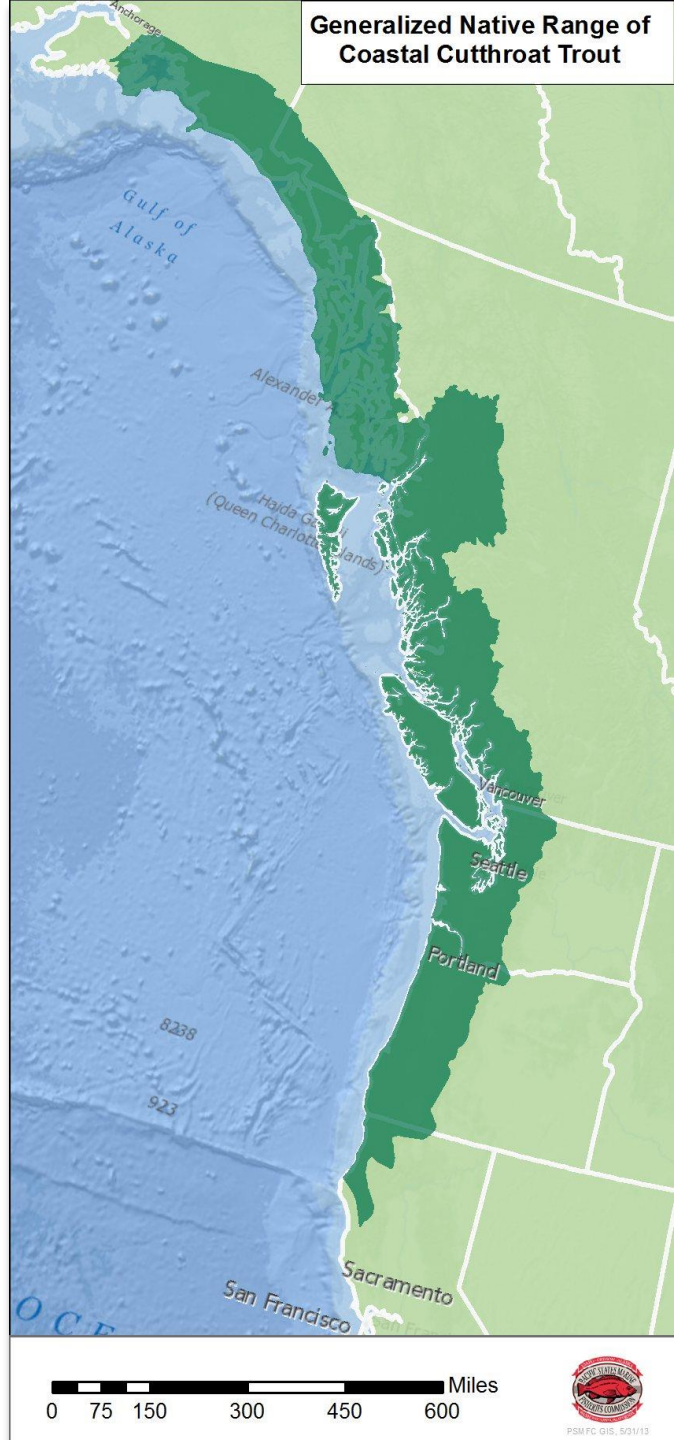
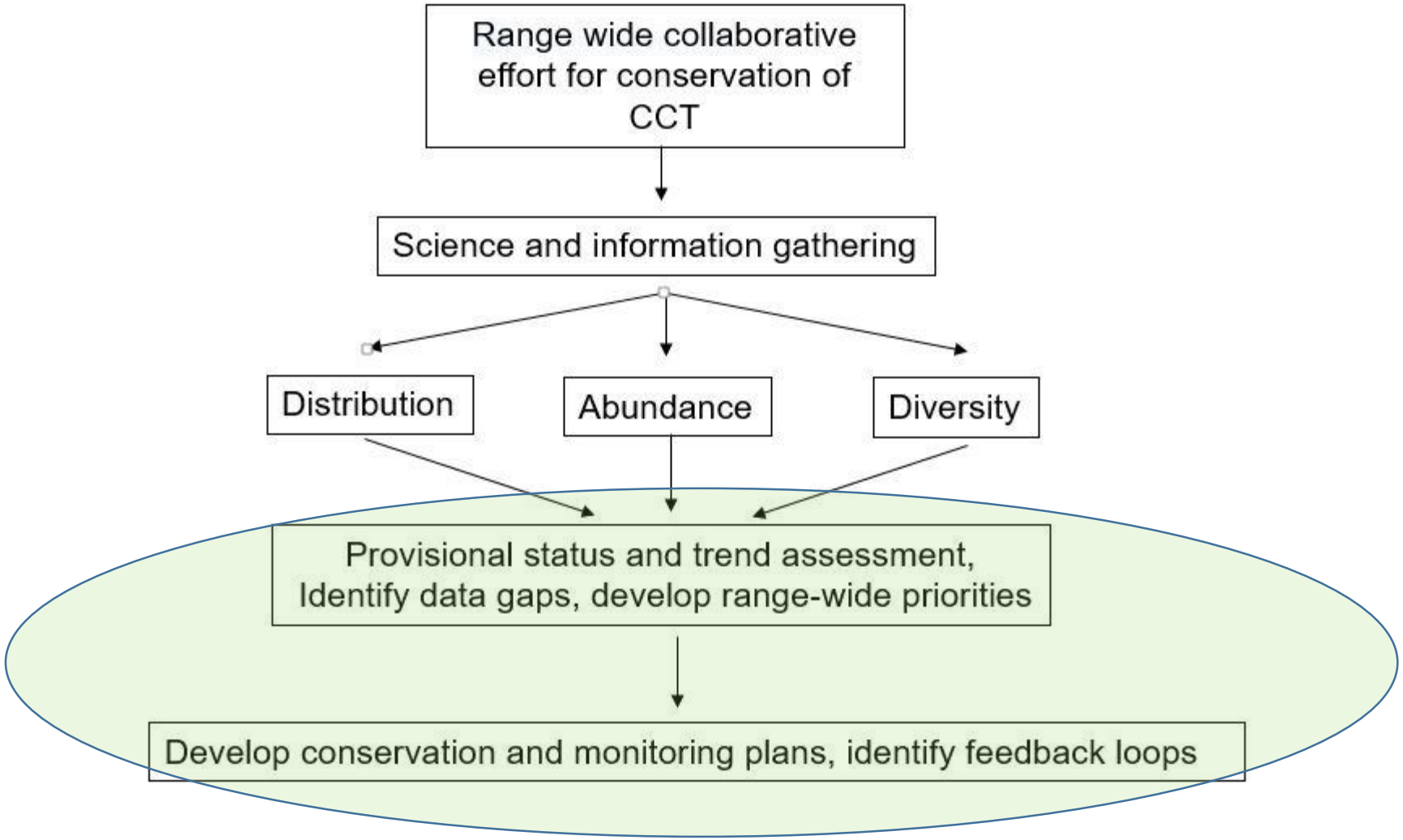
What is the status of Coastal Cutthroat Trout throughout their geographic range?

- Distribution
- Diversity (life history)
- Hybridization
- Population abundance (health)
- Habitat, both freshwater and estuary
- Non-native species
- Limiting factors
- Current monitoring and conservation



Find common elements- develop a shared vision

- Where are the fish?
- What are they doing?
- How are they doing?


Range wide collaborative effort for conservation of CCT
Science and information gathering
Distribution
Abundance
Diversity
Provisional status and trend assessment, Identify data gaps, develop range-wide priorities
Develop conservation and monitoring plans, identify feedback loops

How do you assess a widely distributed relatively common subspecies?

- Best practices
  - Literature review identified the elements needed for comparison with other salmonid species and interior trout.

- Science-based
  - Developed standard protocol based on other efforts, provided benchmarks
  - Transparent and repeatable
  - GIS interface for protocol and data processing

How can we accomplish such a huge task with limited resources?

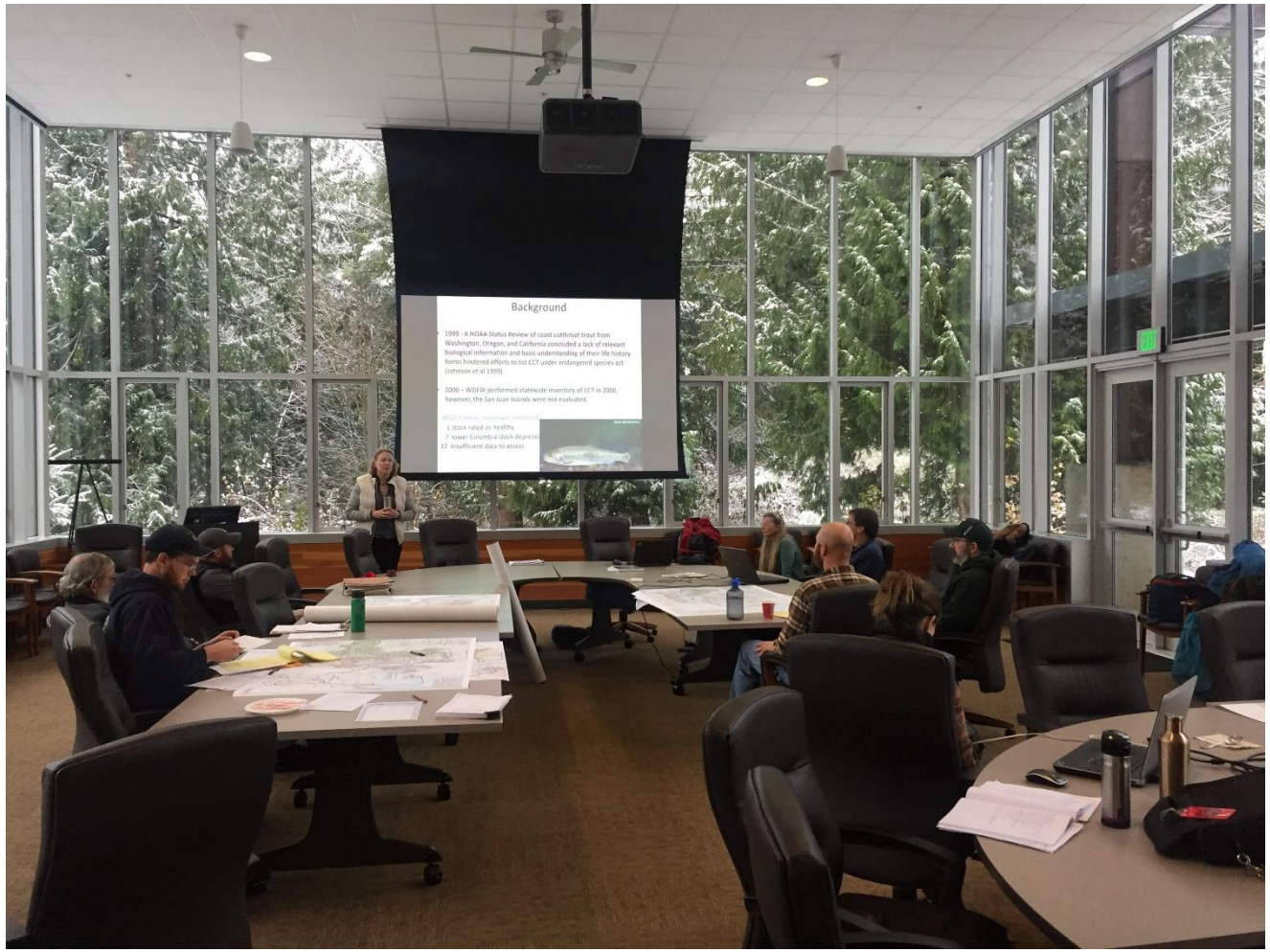
- Professional crowd-sourcing!

  Go to the field offices!

- Pre-workshop data-gathering

- Protocol driven workshop

- Post-workshop processing and survey



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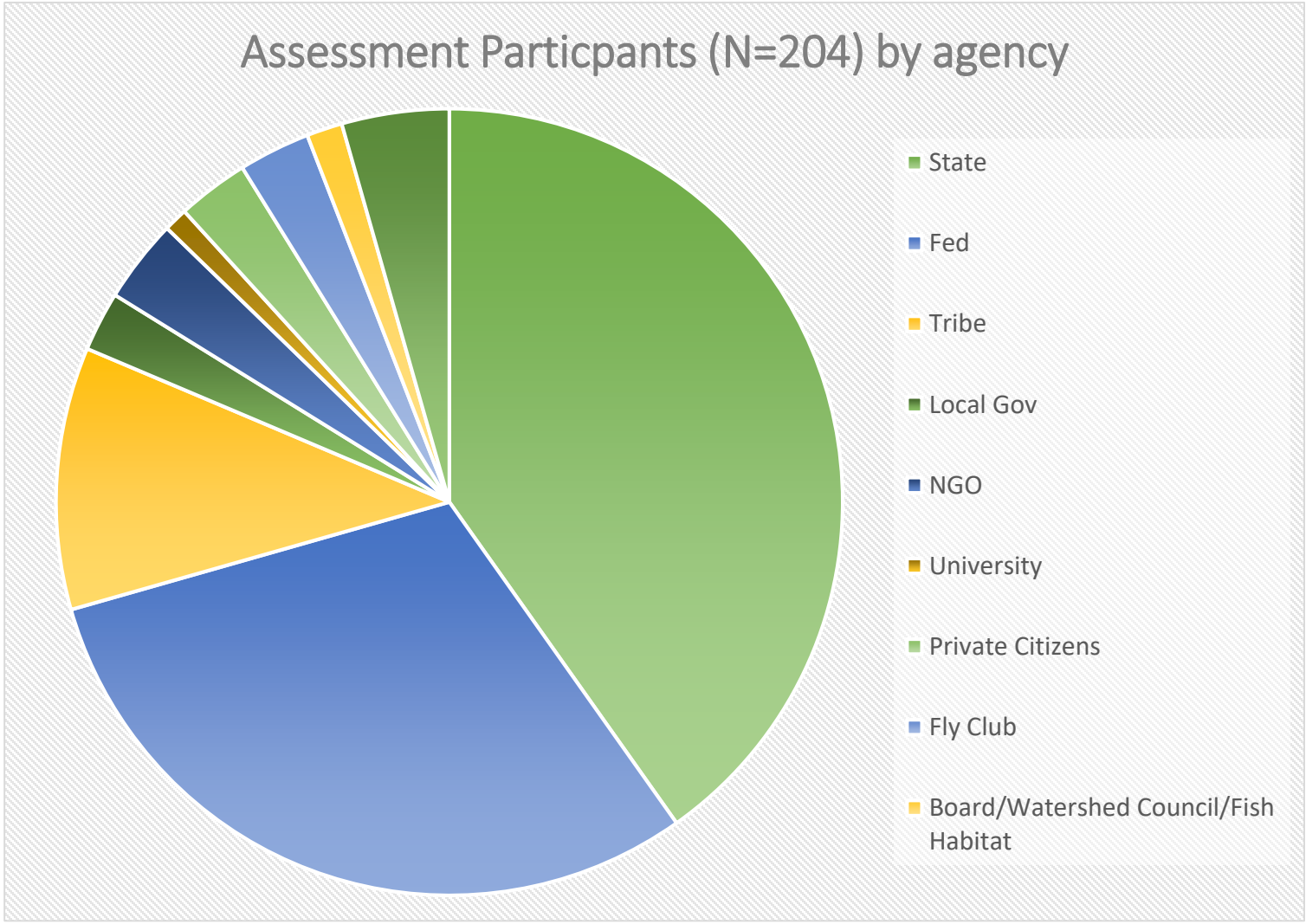
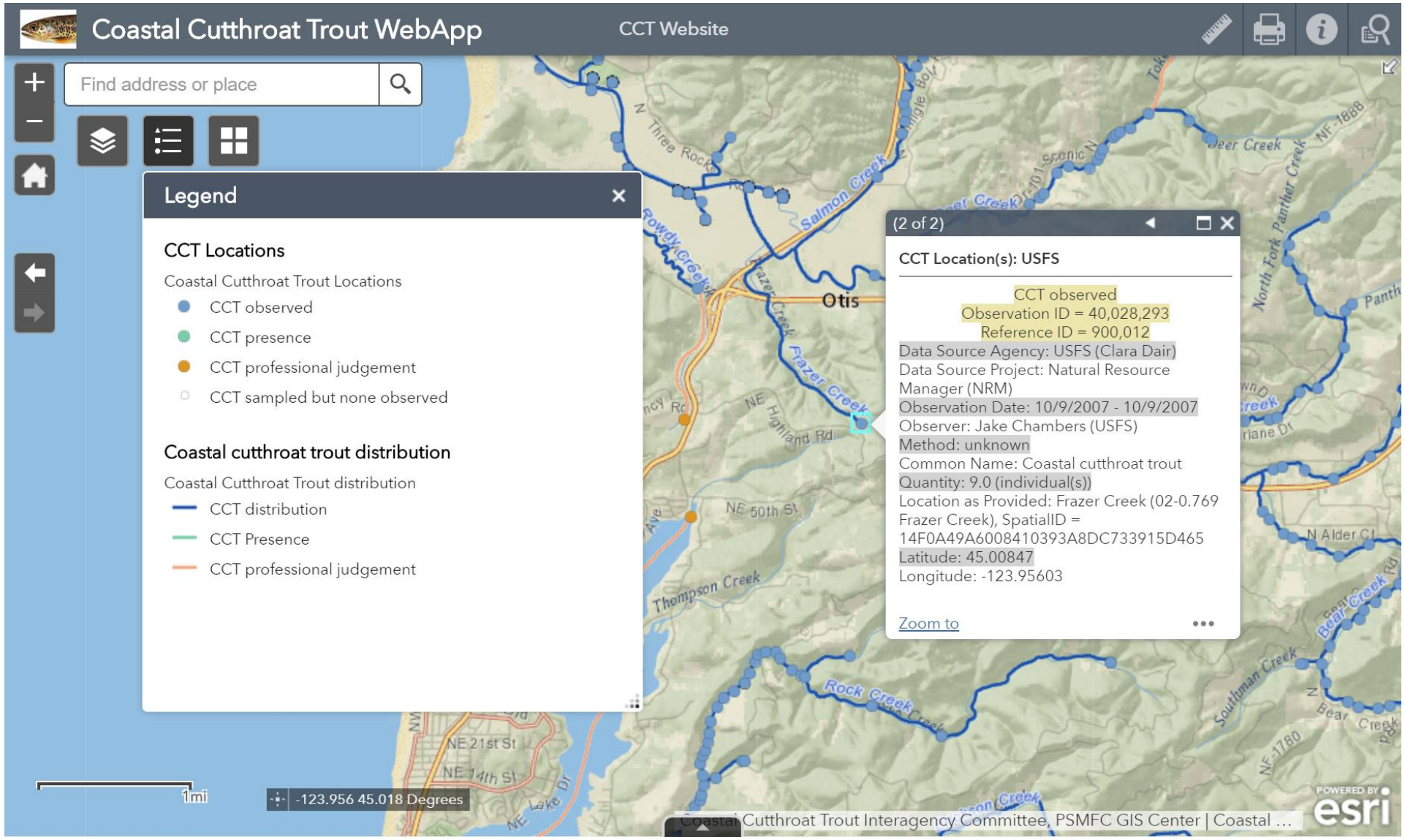


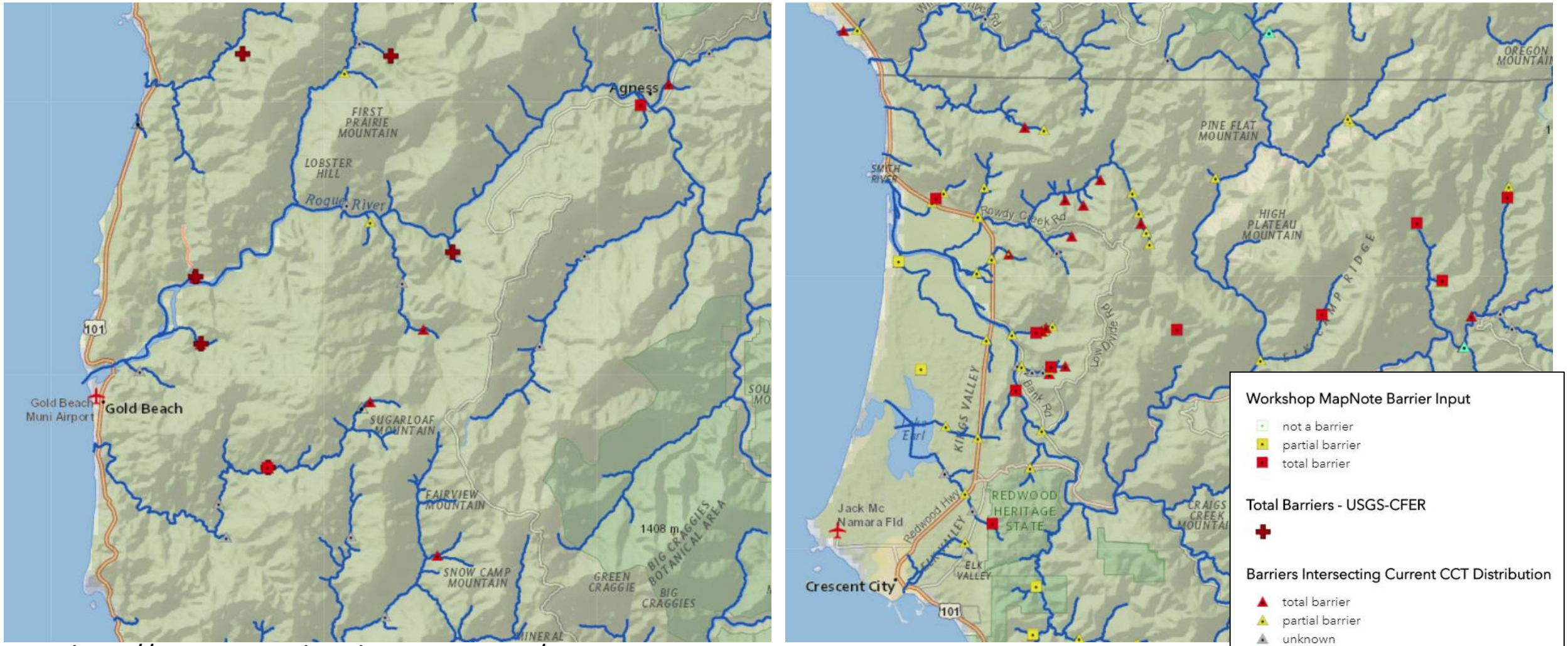
Data collection (N = 108,818)

Go to http://www.coastalcutthroattrout.org/ to access CCT WebApp



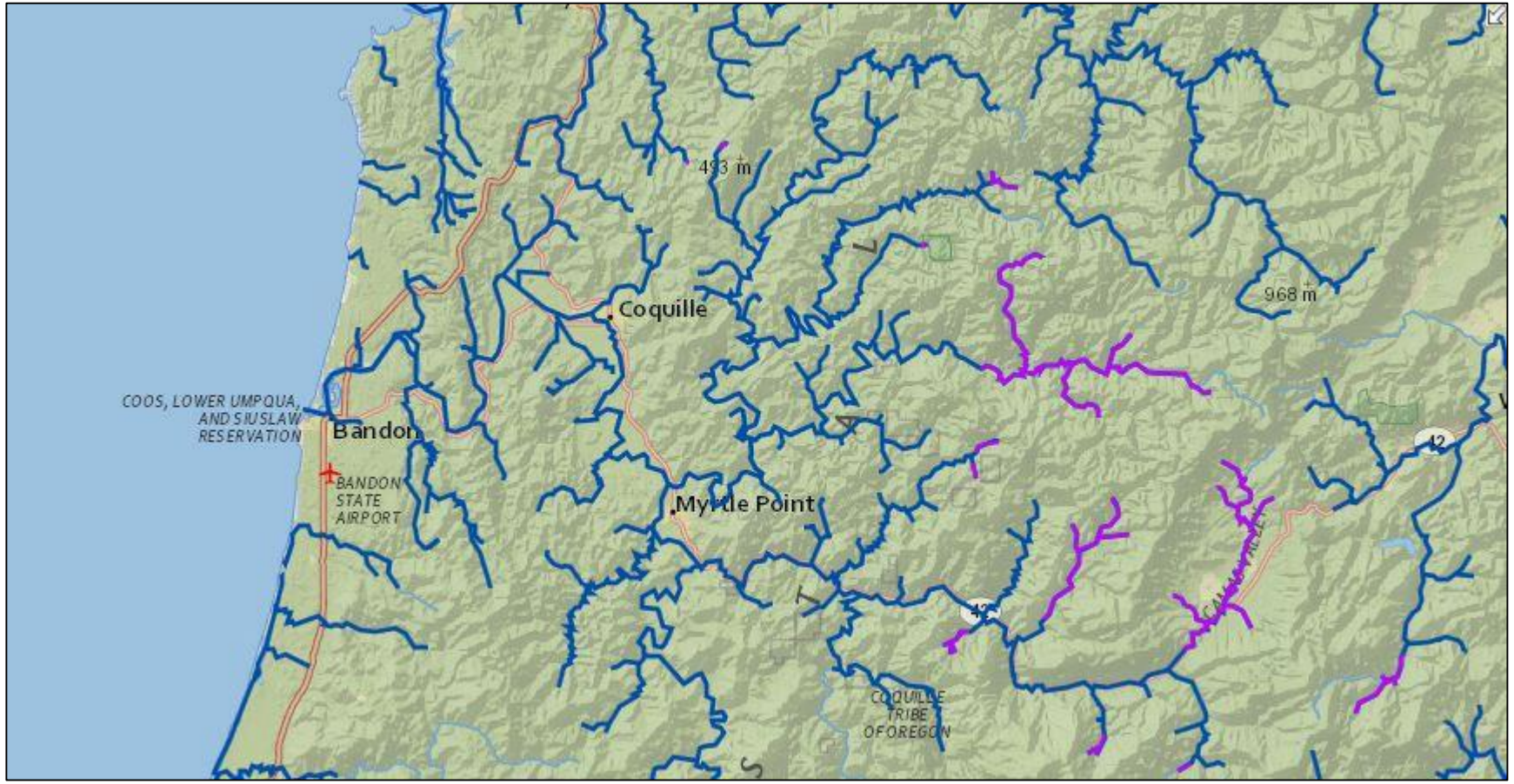
- Observation or survey tied to blue distribution lines.
- Maintain elements of survey data; agency, data source, year, observer, method, etc.

Barriers: natural and human-caused intersection CCT distribution



Go to http://www.coastalcutthroattrout.org/

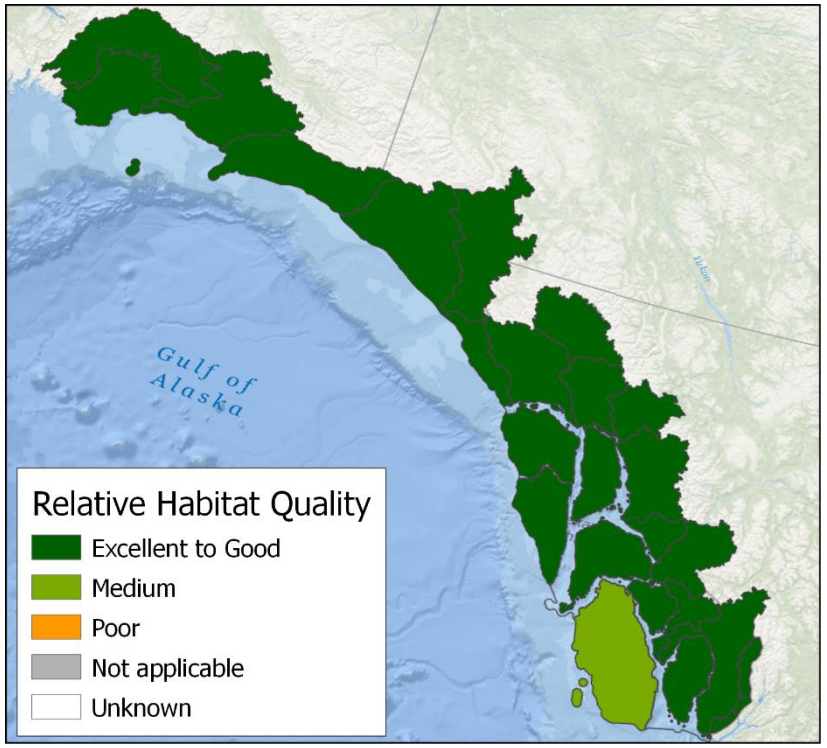
Coastal Cutthroat Trout reaches above and below waterfall barriers



CCT Distribution Below waterfall barrier

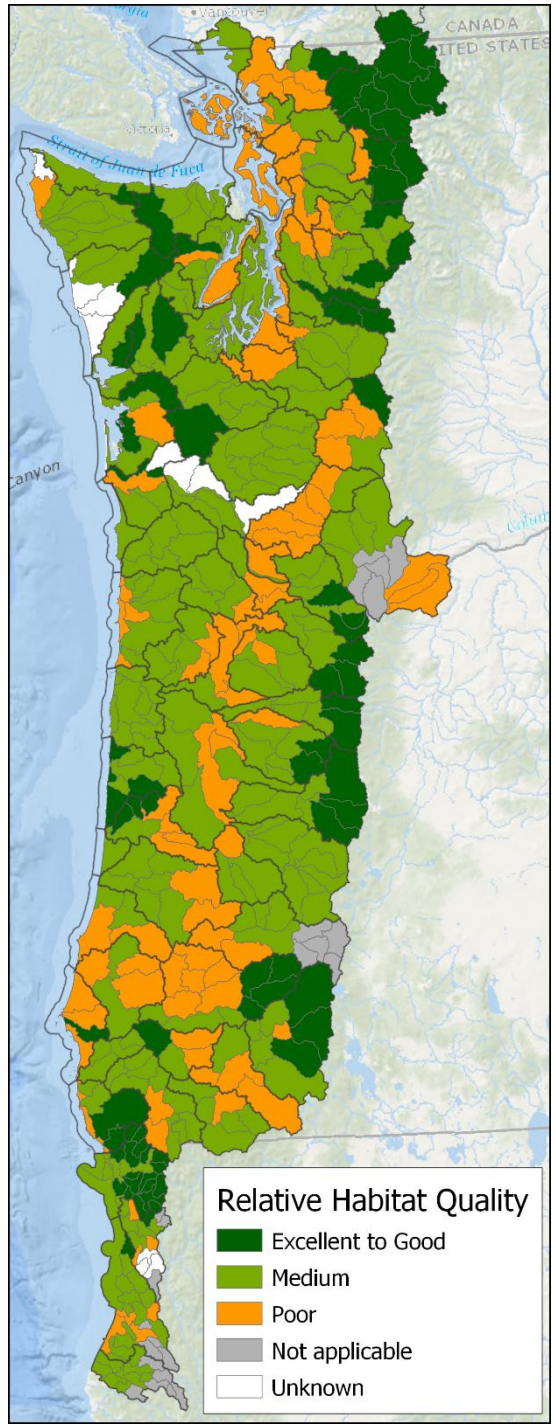
CCT Distribution Above waterfall barr

Relative Habitat Quality



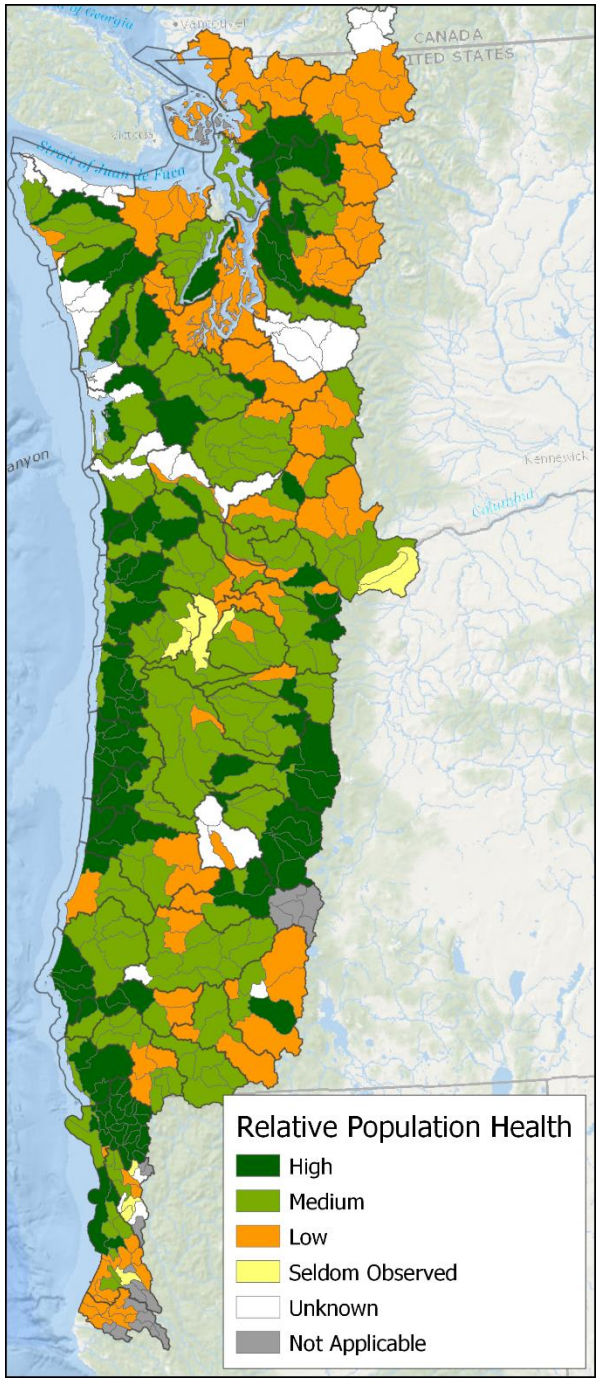
Relative Habitat Ranking	Basis of response		
	High or highest	Professional opinion	NA (or NULL)
Excellent to Good (n=105)	56%	30%	14%
Medium (n=239)	67%	24%	9%
Poor (n=94)	47%	44%	9%

*Note change in scale (N. CA and AK)



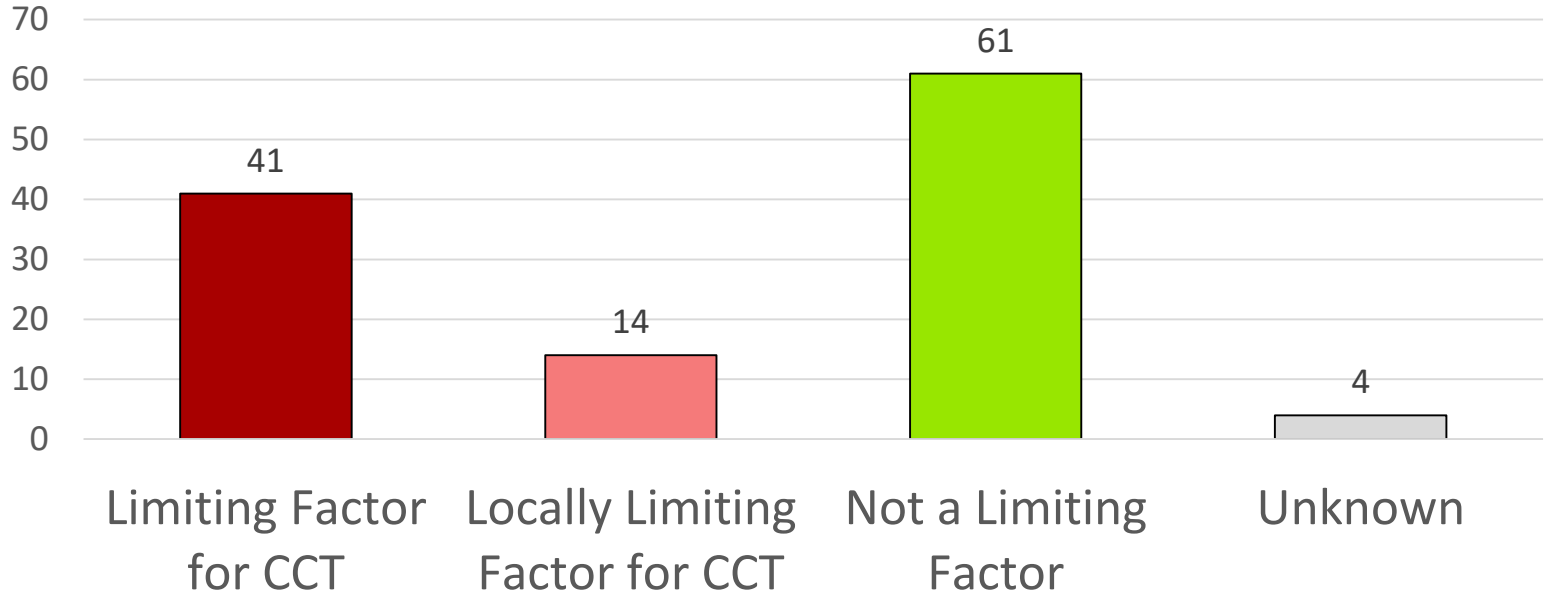
Relative Population Health

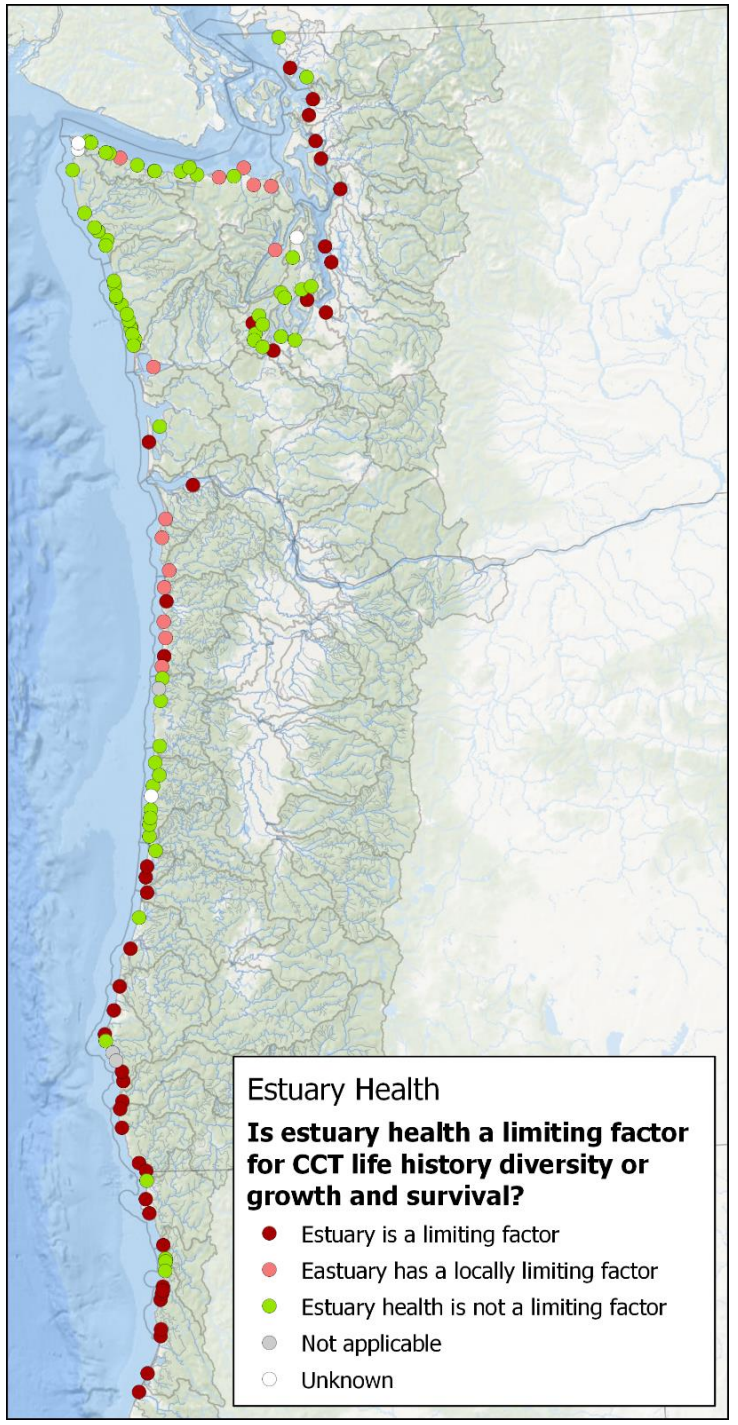
- Mosaic pattern
- Opportunity for further analysis (land ownership, regulations for example)



Relative Population Health	Basis of response		
	High or highest	Professional opinion	NA (or NULL)
High (n=140)	74%	18%	9%
Medium (n=171)	66%	25%	9%
Low (n=102)	49%	41%	10%

Estuary Health, N = 120





Limiting factors

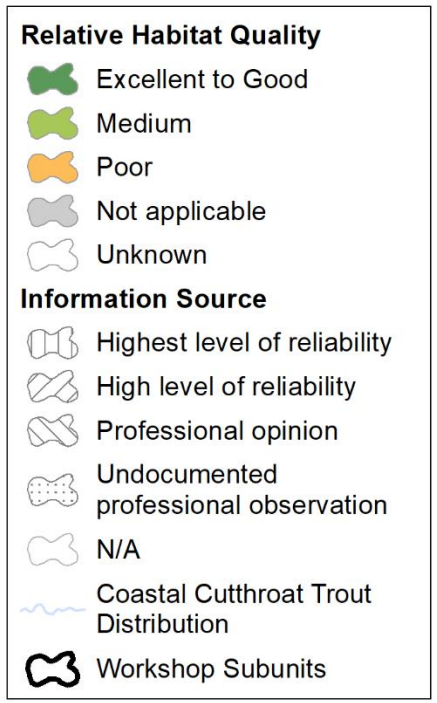
- Habitat: estuary health, physical barriers, temperature barriers, roads, mining, forestry practices, historical legacy of past practices, water quality and quantity, diversions, agriculture, and urbanization.

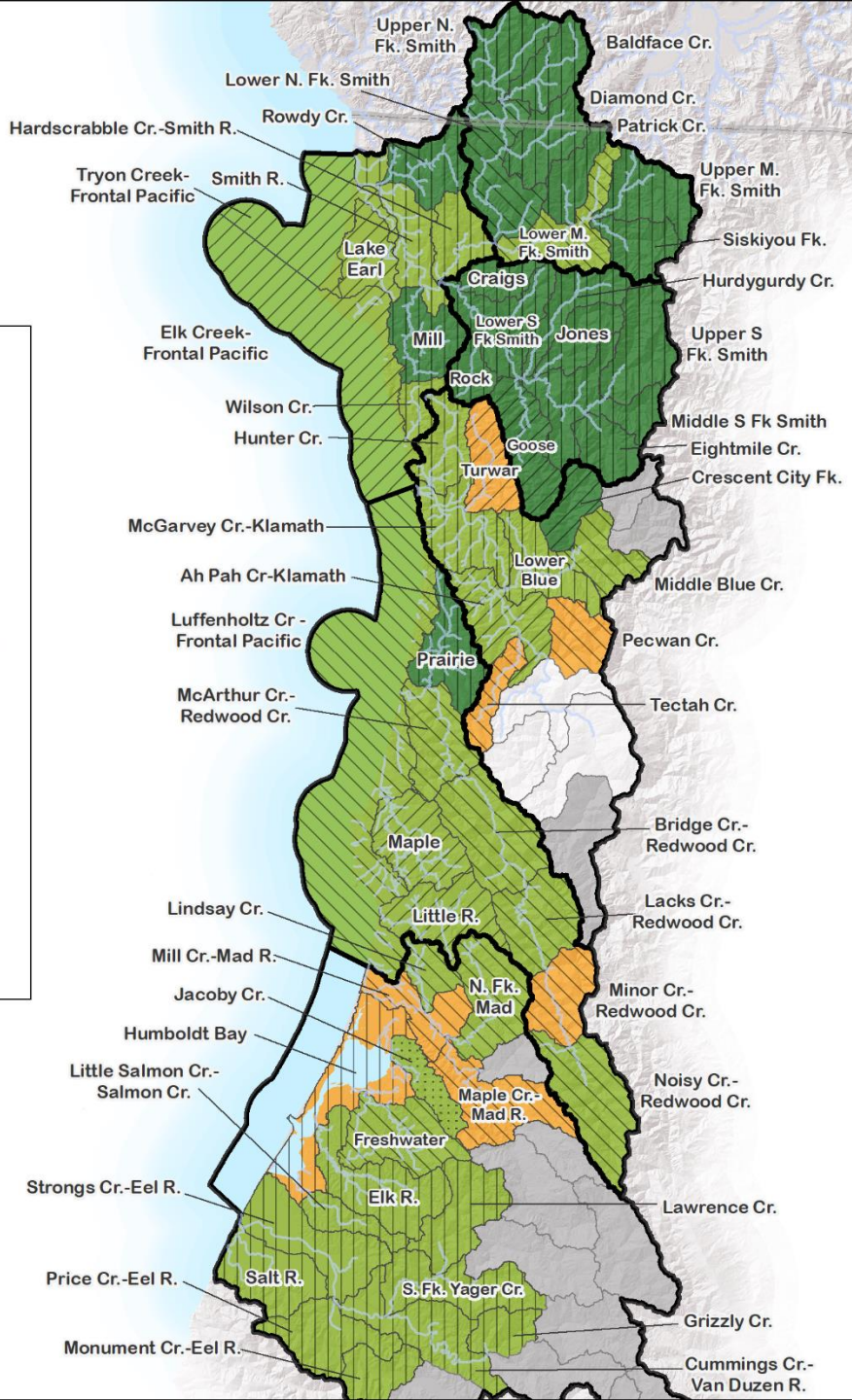
- Biological factors: non-native species, hybridization with non-native RBT.

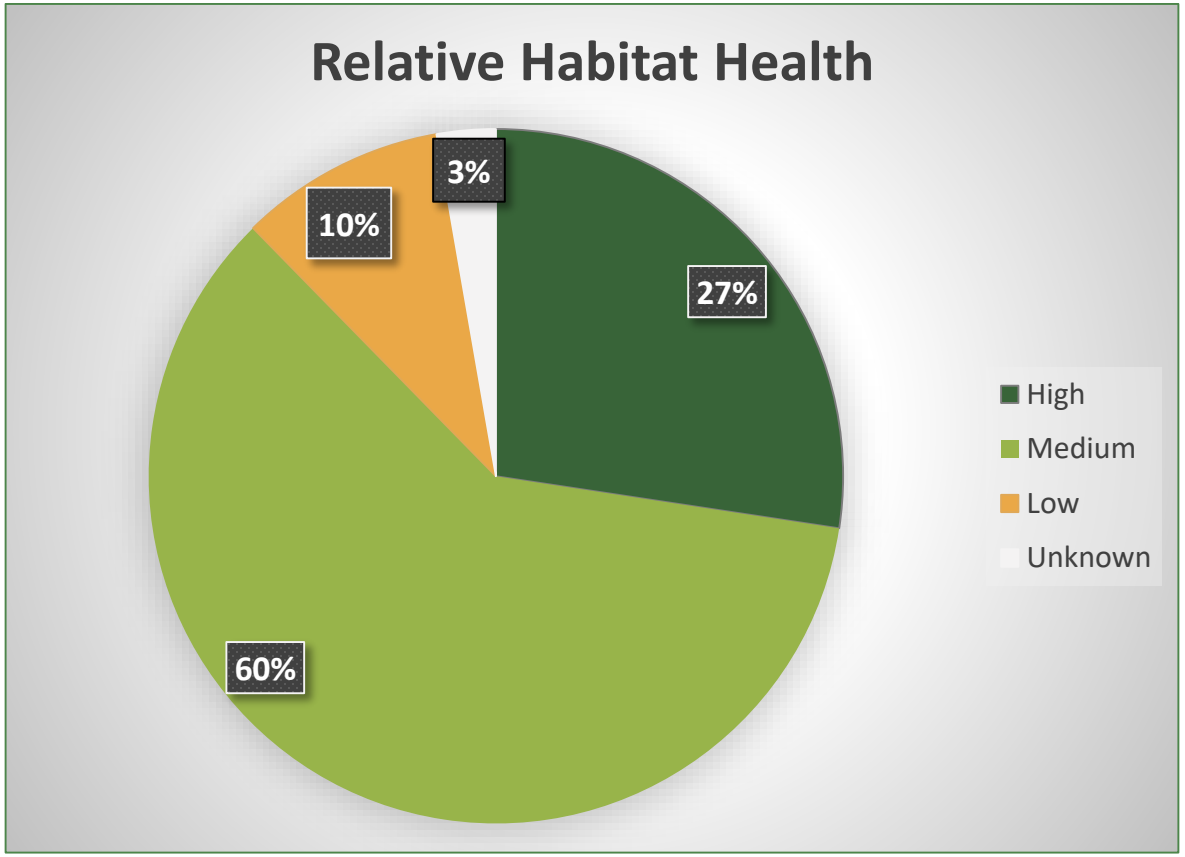
- Human factors: lack of knowledge, triage.

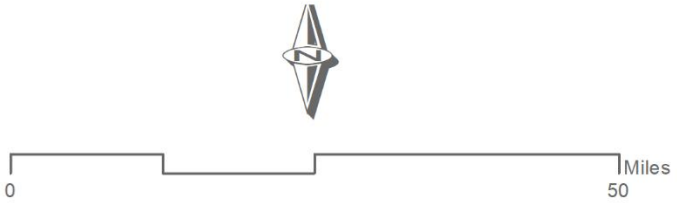
CCT California Workshop Results
Relative Habitat Quality

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



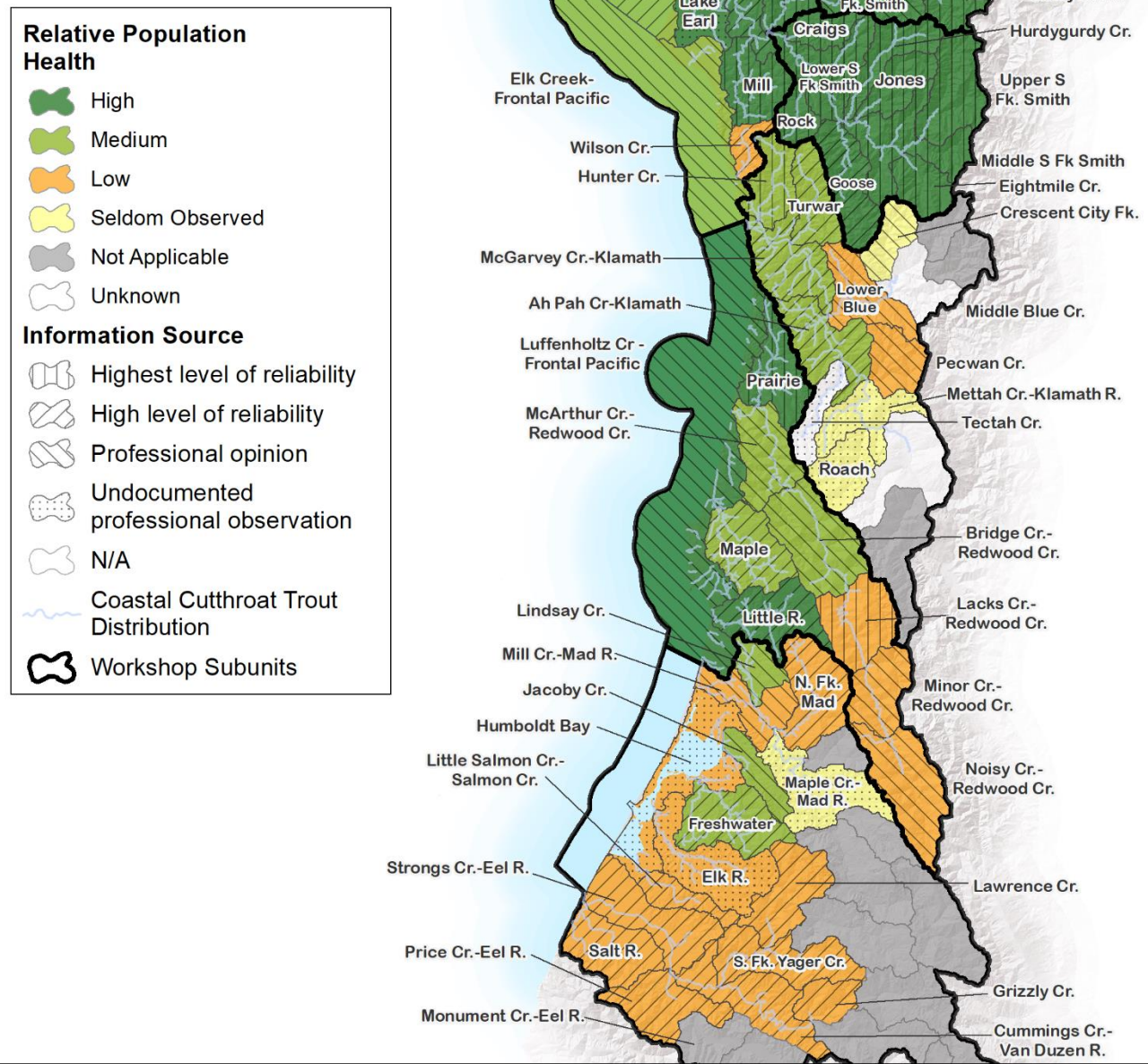


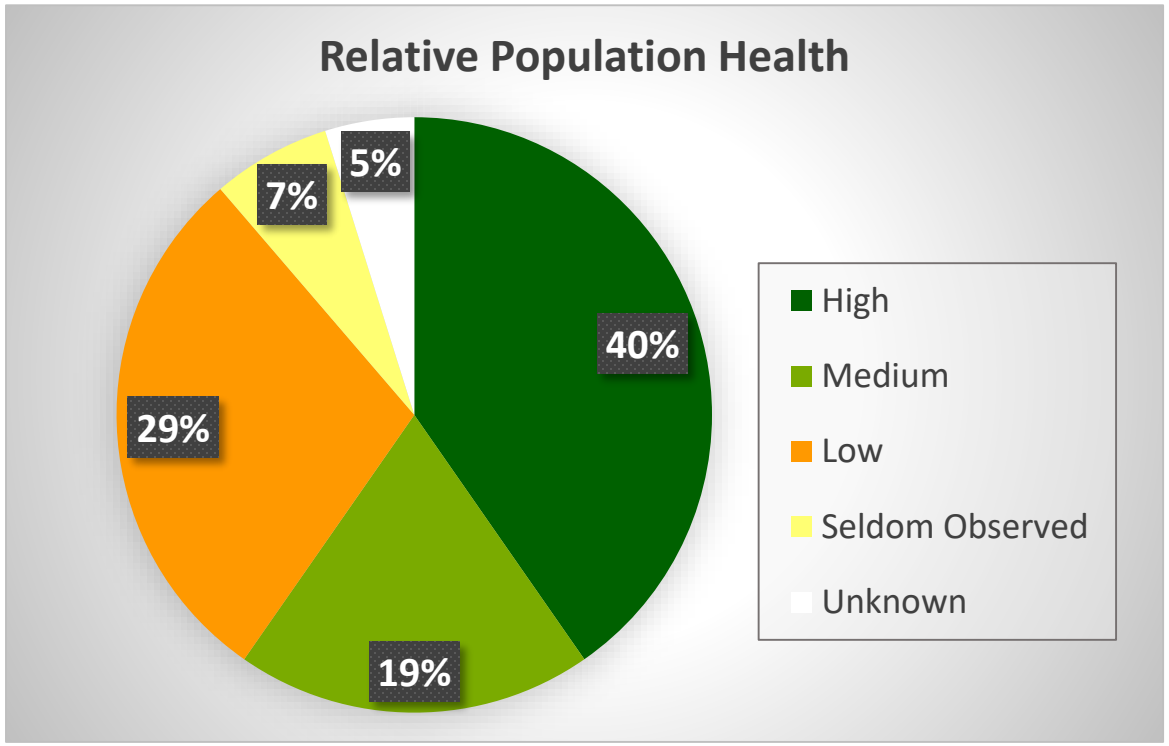


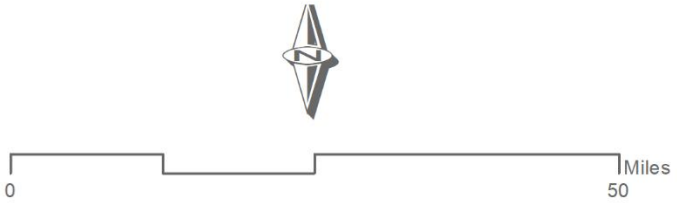


CCT California Workshop Results
Relative Population Health

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







Future Analysis- one scenario

Location 4th field HUC	Habitat Quality Rating (1-4)	Population Rating (1-4)	Life History diversity (1-4)	Land use Designation (GAP percent coverage 1-5)	Monitoring (1-4)	Limiting Factors (1-4)	Total (range 6-25)
Smith River, CA	4	4	4	4	4	4	24
Lower Eel River, CA	3	2	2	1	3	1	14

“In this day of detailed research, surprisingly little is known of the cutthroat, especially in his sea-running phase. Life history, migration stages, feeding habitats, stream preferences, all are matters of vague surmise and angler’s observation. Even his peak spawning time remains a matter for debate, although it probably varies a good deal from one watershed to another.”

R. Haig-Brown 1964 – Fisherman’s Fall