USDA
United States Department of Agriculture

Gathering Information

What to Know and How to Find It

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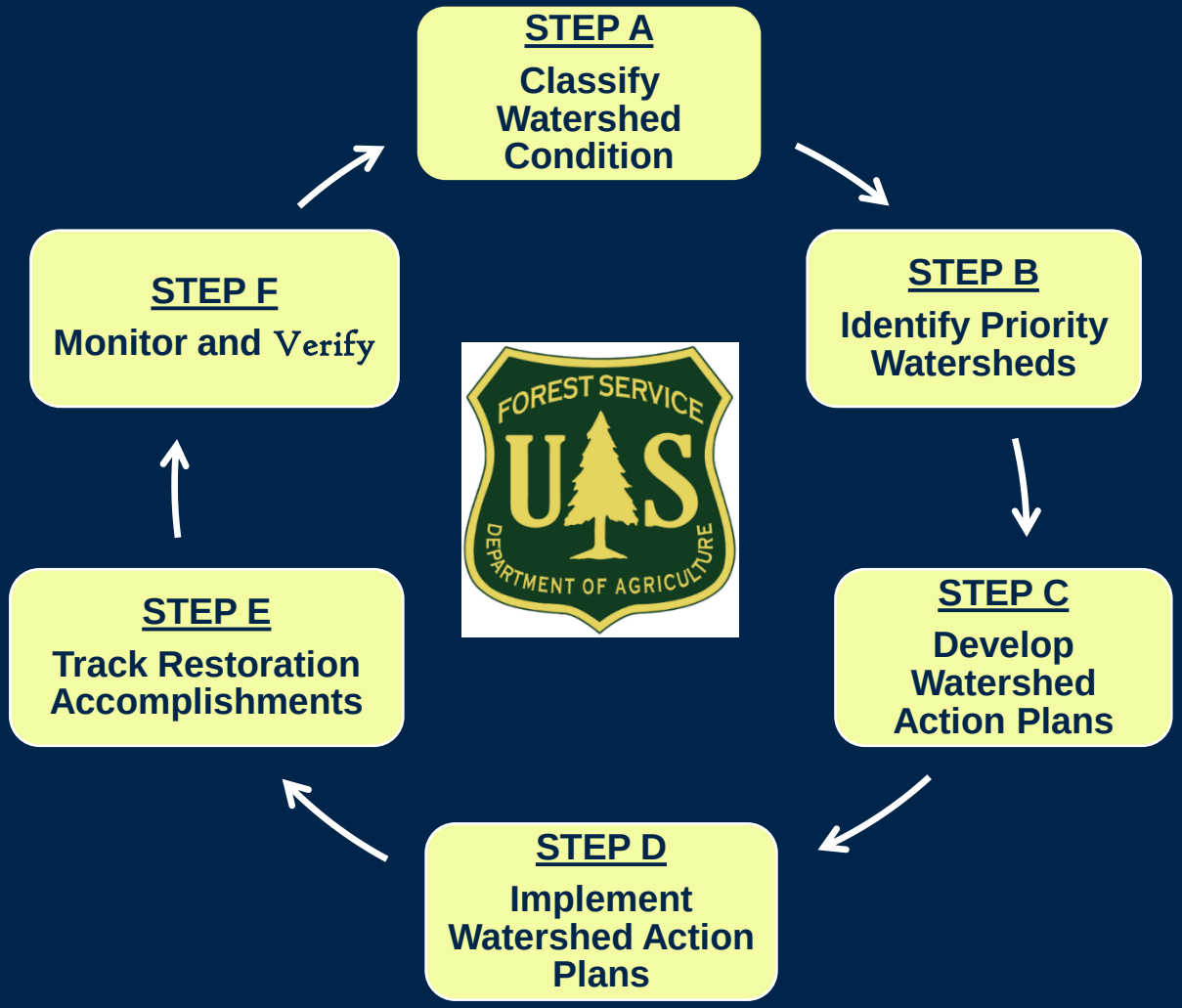
The Watershed Condition Framework (WCF)

A Six-Step Adaptive Management Process

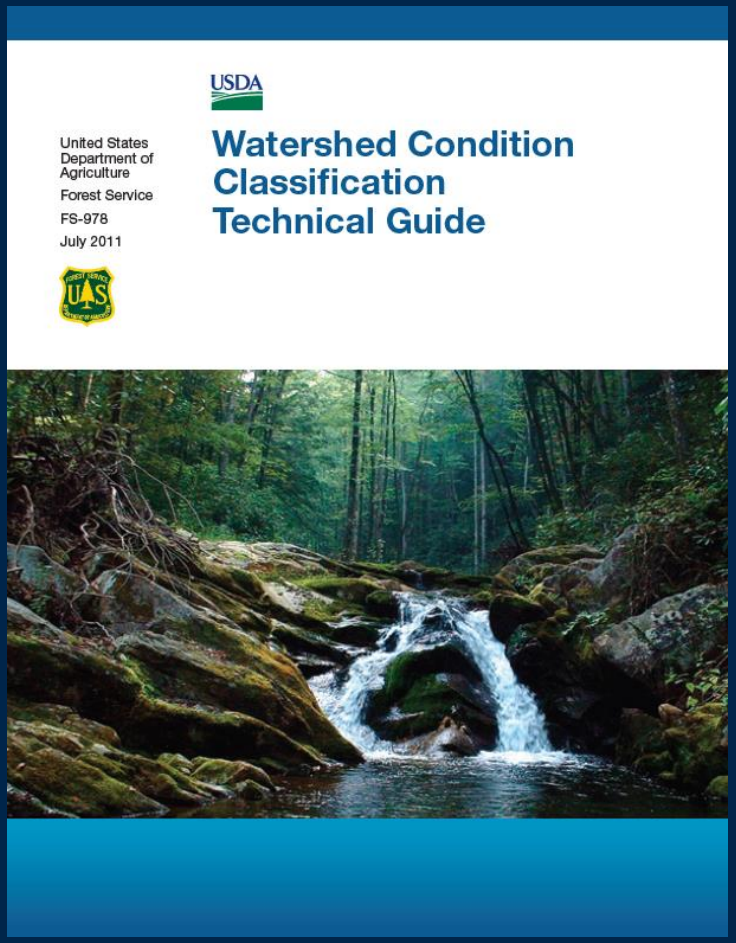


Watershed Condition Assessment

Watershed Condition Classification Technical Guide
FS-978 (July 2011)

Analysis

- **Coarse-Scale**
- **GIS-Based**
- **Criteria/Guidelines**



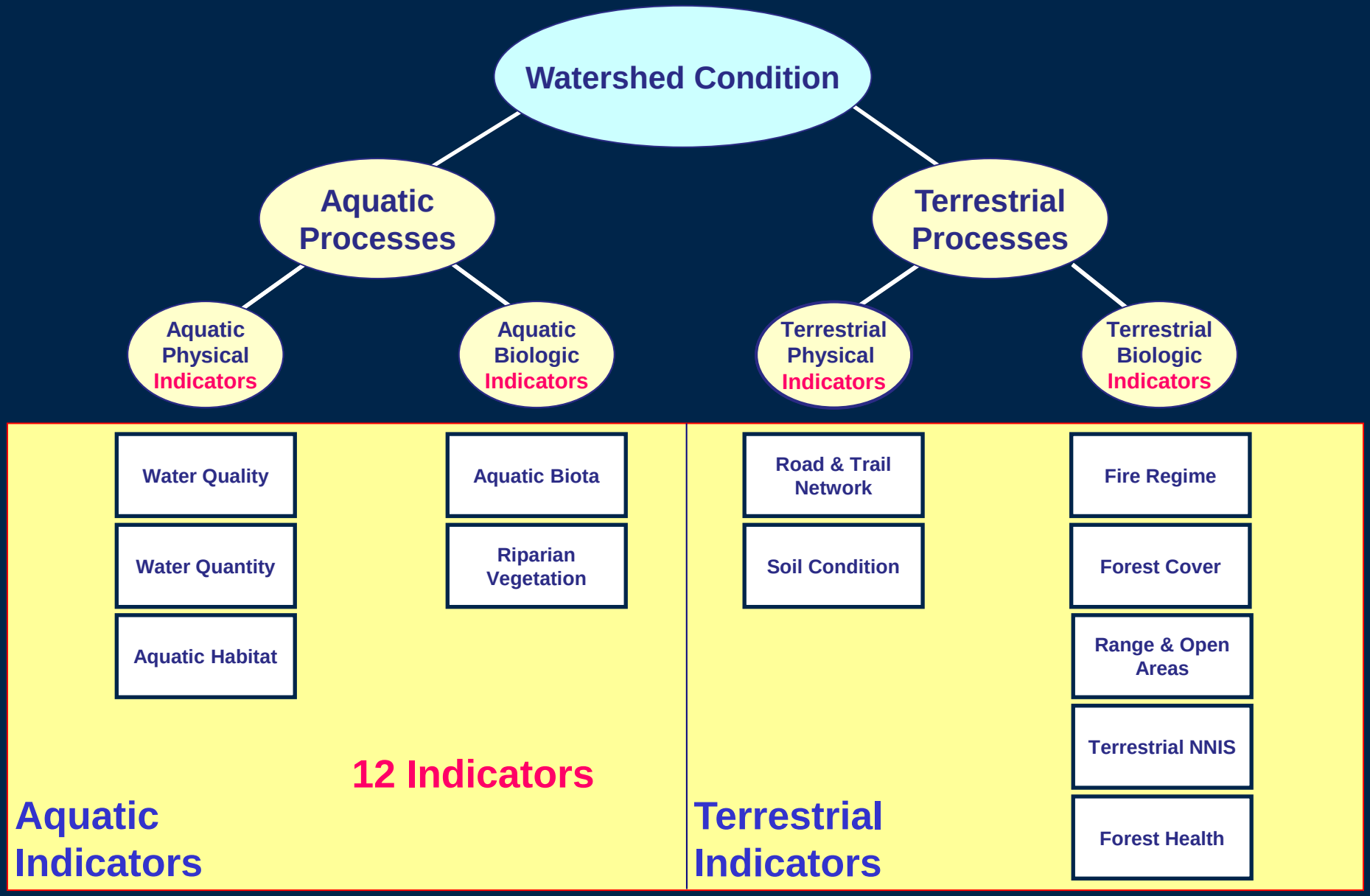
Condition Classes

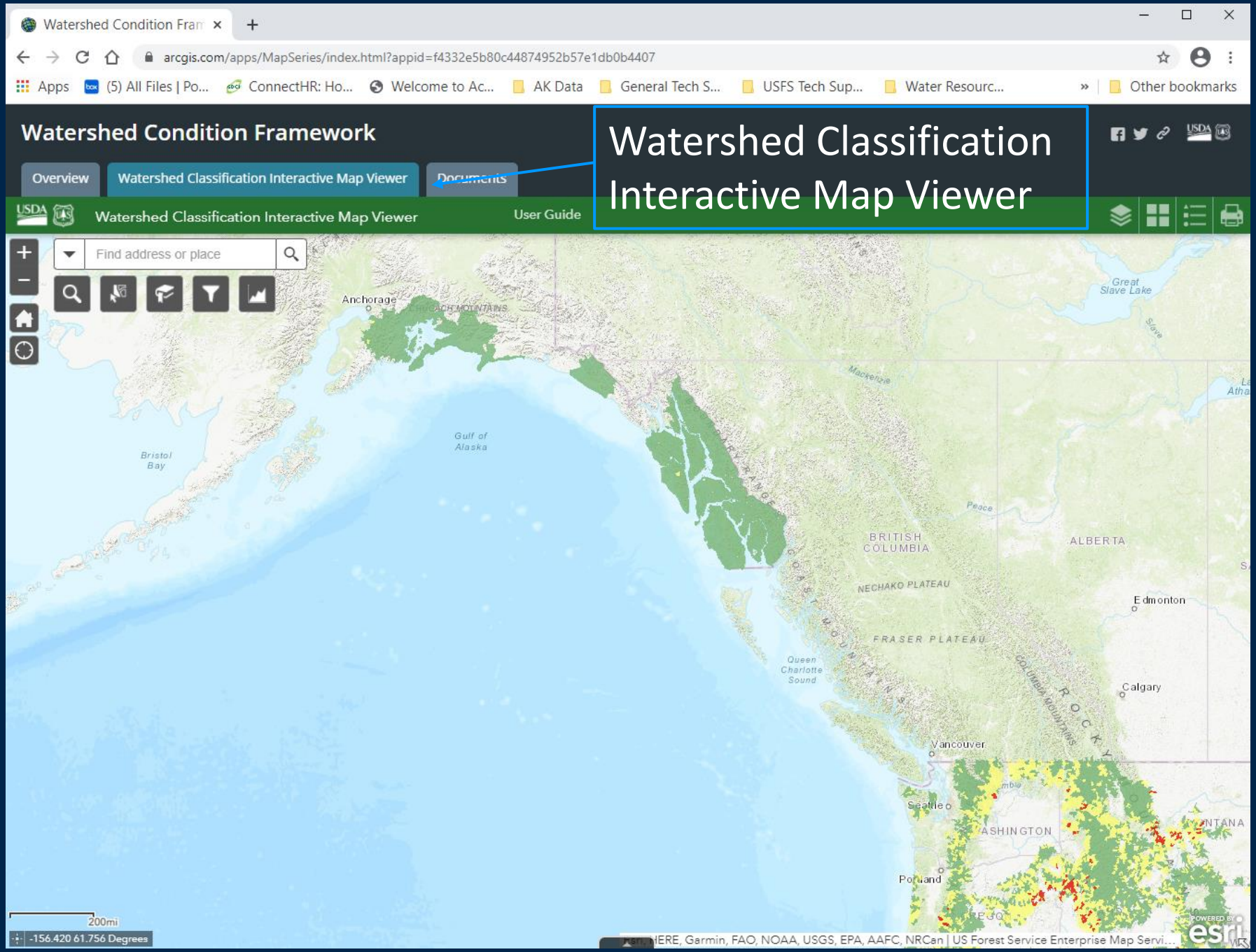
Properly Functioning

Functioning At Risk

Impaired Function

Watershed Condition Classification





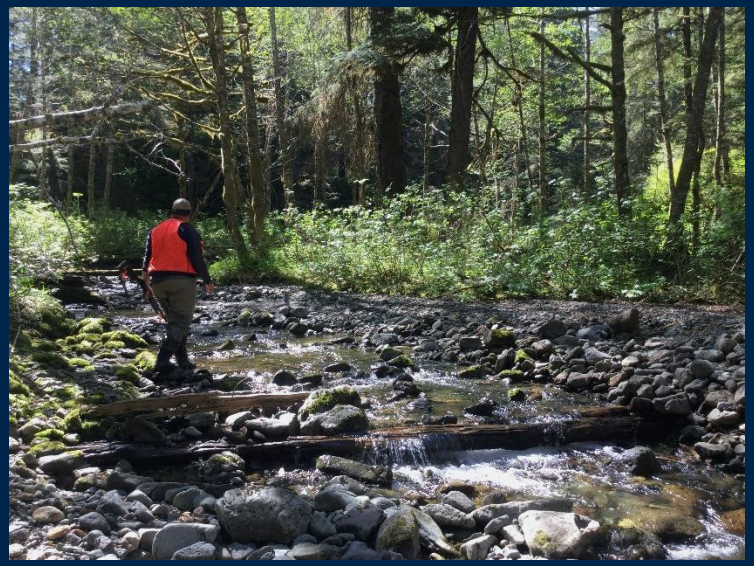
Watershed Classification Interactive Map Viewer

Watershed-Scale Planning

- Determine project objectives
- Compile information
  1. Remote sensing data
  2. Field surveys
- Evaluate existing condition
- Identify values and assess risks
- Propose restoration activities
- Implement restoration
- Monitor effectiveness

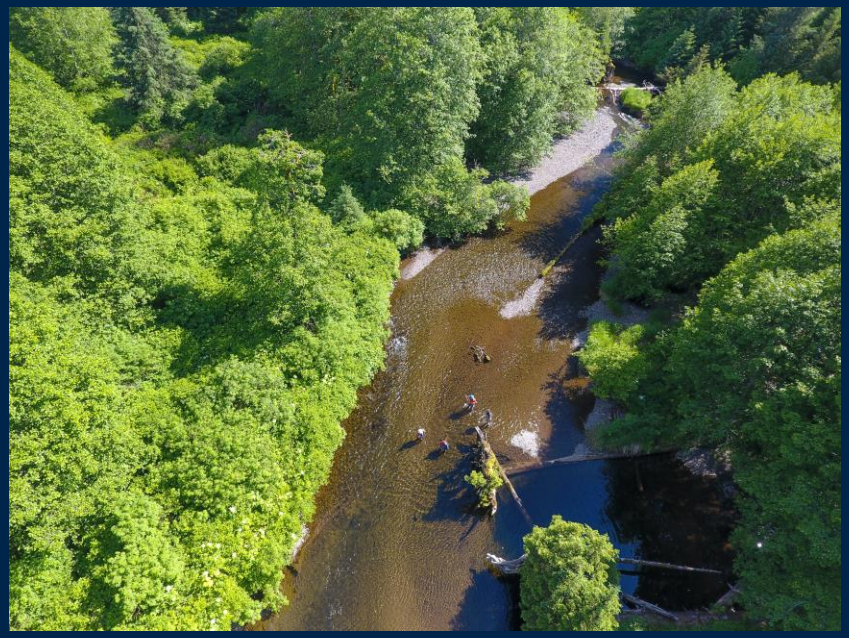
Evaluate existing condition – values and risks

- Where are **valuable aquatic and riparian habitats**?
- What are the **effects of past management**?
- Where is instream and floodplain large wood lacking?
- How are roads affecting hydrologic and sediment transport processes?
- Where are **chronic sediment sources**?
- Where do beaver impact road or stream functions?
- Where have landslides affected streams?



Data Sources

- Data digging (file cabinets, computer files, agency contacts)
- Geospatial data
- Interviews
- References and reports
- Computer modeling
- Field surveys



Online Databases

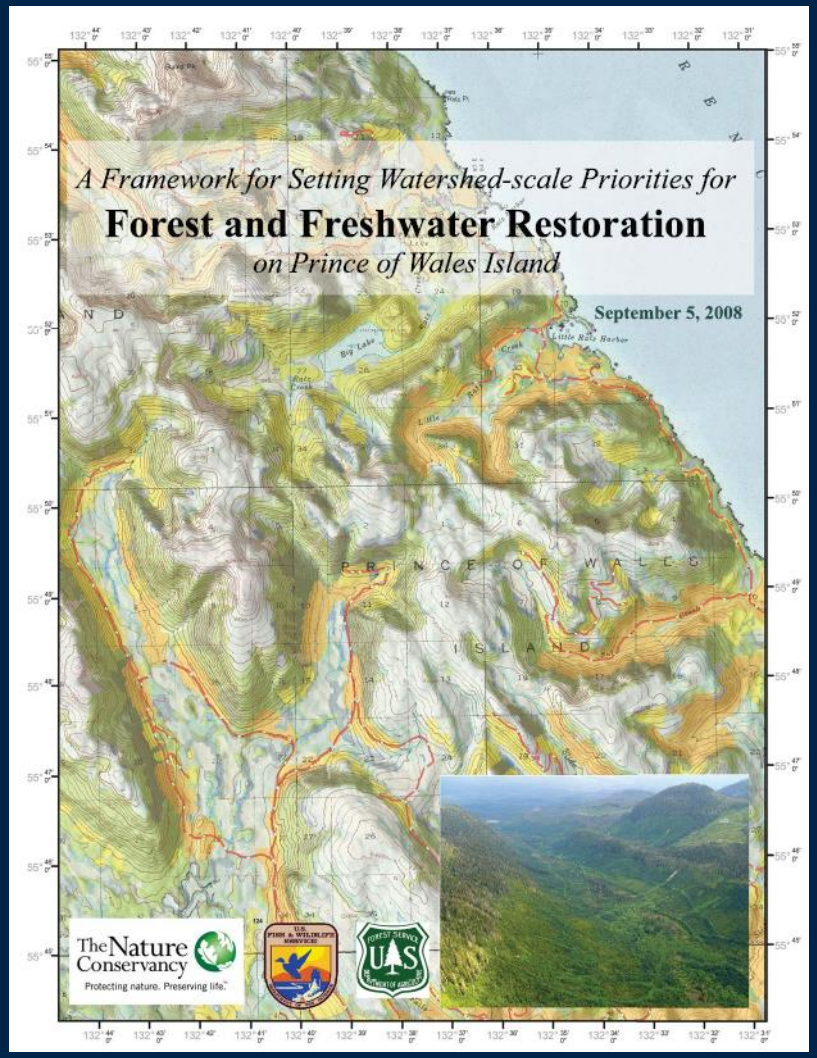
- ADF&G Interactive Mapper – Anadromous Waters Catalog (AWC), Freshwater Fish Inventory Database (AFFI), and Fish Passage Inventory Database https://adfg.maps.arcgis.com/apps/MapSeries/index.html?appid=a05883caa7ef4f7ba17c99274f2c198f
- Southeast Alaska Geospatial Library https://data-seakgis.opendata.arcgis.com/
- USFS Geospatial Data Discovery https://usfs.maps.arcgis.com/home/index.html

Field Surveys

- Stream/riparian condition surveys to identify restoration opportunities
- Stream morphology surveys (cross section, long profile, and pebble count) for project design
- Road condition surveys to identify maintenance needs and sediment sources
- Fish passage surveys to identify barriers and restoration opportunities

Propose actions to meet project objectives

- Where can stream/riparian restoration projects improve water quality, aquatic habitats, or stream resiliency?
- Where and what restoration actions are needed to improve valuable (social and ecological) riparian habitats?
- Where can road maintenance, storage, or decommissioning improve water quality and fish passage?
- Which roads are needed?
  - *Propose maintenance strategy*
- Which roads are no longer needed?
  - *Store or decommission*



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Risks to Watershed Values

- *Upland*
  - Habitat fragmentation
  - Increased erosion from loss of vegetation on steep slopes;
  - Nutrient depletion in soils from loss of vegetative cover and increased rates of water flow
  - Altered maintenance and storage of water in forested wetlands (USFS 2004)
- *Riparian and In-stream*
  - Decreased recruitment capacity for large woody debris contributing to in-stream habitat structure (Fig 2)
  - Sedimentation regime changes resul landslides in uplands and erosion of development
  - Unmaintained culverts resulting in l passage
  - Decrease in large woody debris recr caused loss of pools that provide cri habitat, decreased cover for rearing channel instability, shifts in aquatic (USDA Forest Service 1995)

Prioritize restoration based on habitat condition, biological and social values, and opportunities

Table 5. Potential indices that characterize condition, values and restoration opportunities related to terrestrial and freshwater habitats on Prince of Wales Island.

	Habitat Functions	Indicator (for watershed-scale planning)
CONDITION	*FRESHWATER SYSTEMS*	
	Riparian Functions	♦ Percent of riparian forest in young growth (YG) ♦ Acres of YG riparian forest in wood dependent channels
	Connectivity	♦ Number of "red pipe" culverts within watershed
	Water Quality	♦ Road miles and/or density in watershed ♦ Number of stream crossings ♦ Acres of harvest on steep slopes (>67%)
	Water Quantity	♦ Percent of watershed area in YG
	TERRESTRIAL SYSTEMS	
	Deer Winter Range	♦ Acres of YG (not cut or thinned within 15 yrs) o S or W exposure o <800 ft elevation o Large patch size (1/2 home range)
	Karst forest	♦ Acres of YG on high vulnerability karst
	Connectivity	♦ Identify corridors between large intact habitat patches
	Biological / Human Values	
VALUE	*FRESHWATER SYSTEMS*	♦ ADF&G Primary Salmon Producers ♦ Unique or sensitive stocks (Halupka et al. 2000) ♦ Salmon distribution and diversity index
	TERRESTRIAL SYSTEMS	♦ Relative biodiversity index (Albert and Schoen 2007a) o Habitat capability for deer, bear & murrelet o Freshwater salmon distribution o Large-tree forest (riparian, upland, karst) o Estuaries (acres of salt marsh habitat) ♦ Connectivity points (island "bottle necks")
	HUMAN VALUES	♦ Community water supply ♦ Subsistence salmon harvest ♦ Deer & Bear harvest (by WAA) ♦ Guided sport fishing permits
	Opportunity	
OPPORTUNITY	*Commercial YG Potential*	♦ Commercial thinning opportunities (acres x size class) ♦ Fish & wildlife habitat improvement (YG in NDEV)
	Partnerships	♦ Existing watershed councils
	Research Study Sites	♦ Long-term study sites as basis for adaptive management
	Other factors	♦ Logistics, visibility, funding opportunities, etc.

Solicit feedback regarding social values, subsistence needs, recreational opportunities through interviews, workshops, online surveys

watershed restoration needs.

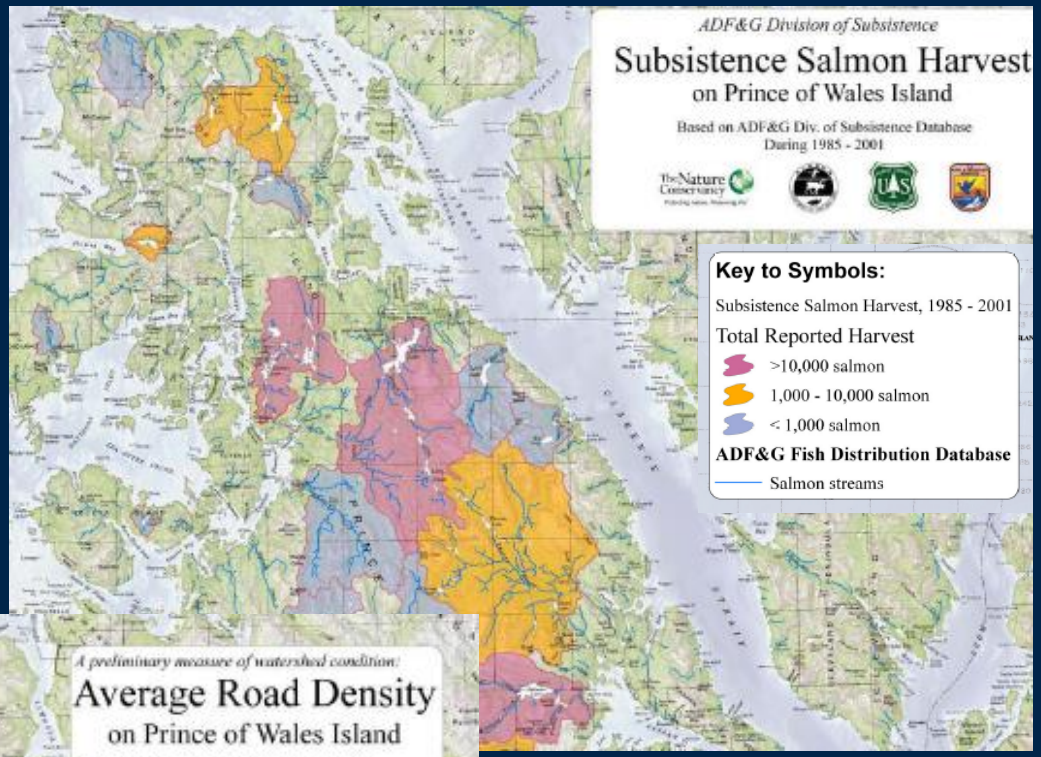
Workshop I Objectives:

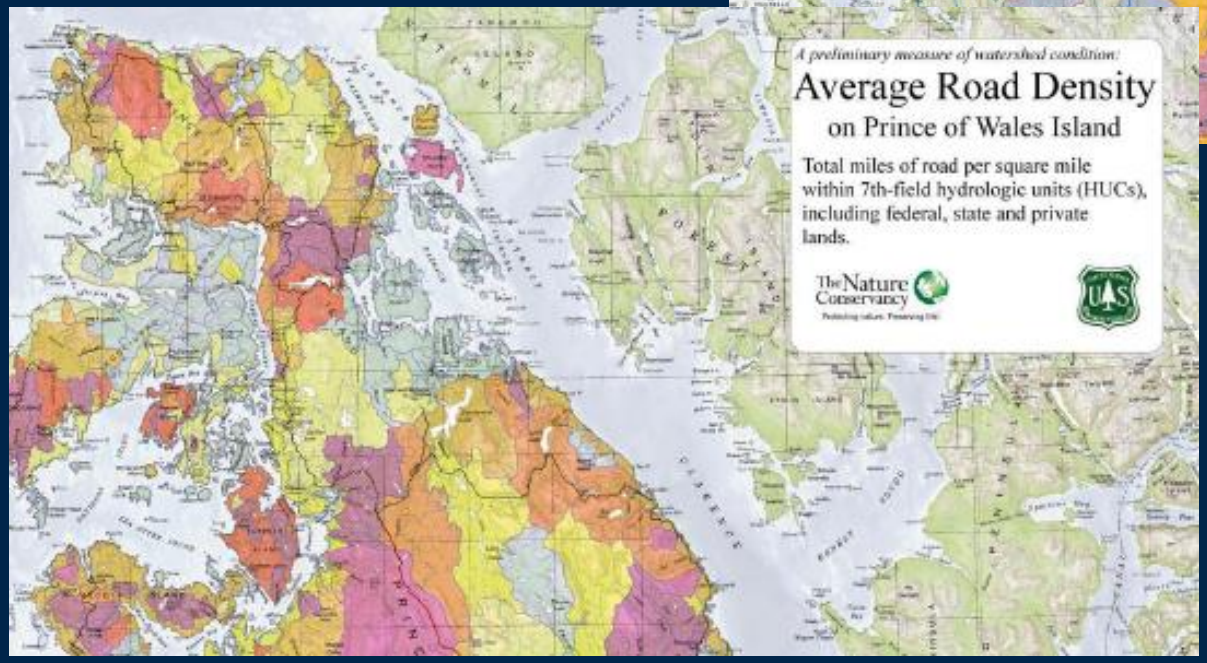
- Design a method for systematic prioritization of restoration activities on Prince of Wales Island that includes aquatic and terrestrial habitats;
- Review and incorporate the best available science and existing young-growth strategies and planning;
- Outline a science-based framework for restoration planning and monitoring.

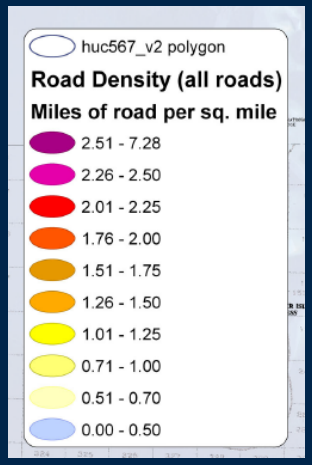
Workshop II Objectives:

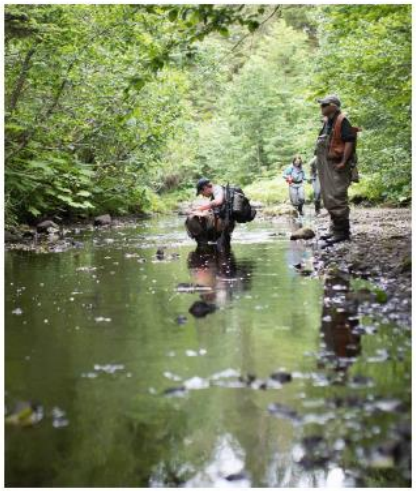
- Evaluate the relative need for restoration and management among watersheds island-wide;
- Build consensus on watershed priorities with input from landowners, watershed councils, agency staff, interested stakeholders;
- Apply information on priority watersheds to help guide partnerships in restoration work on Prince of Wales Island and provide a decision-making tool for local restoration practitioners.

Value and Risk









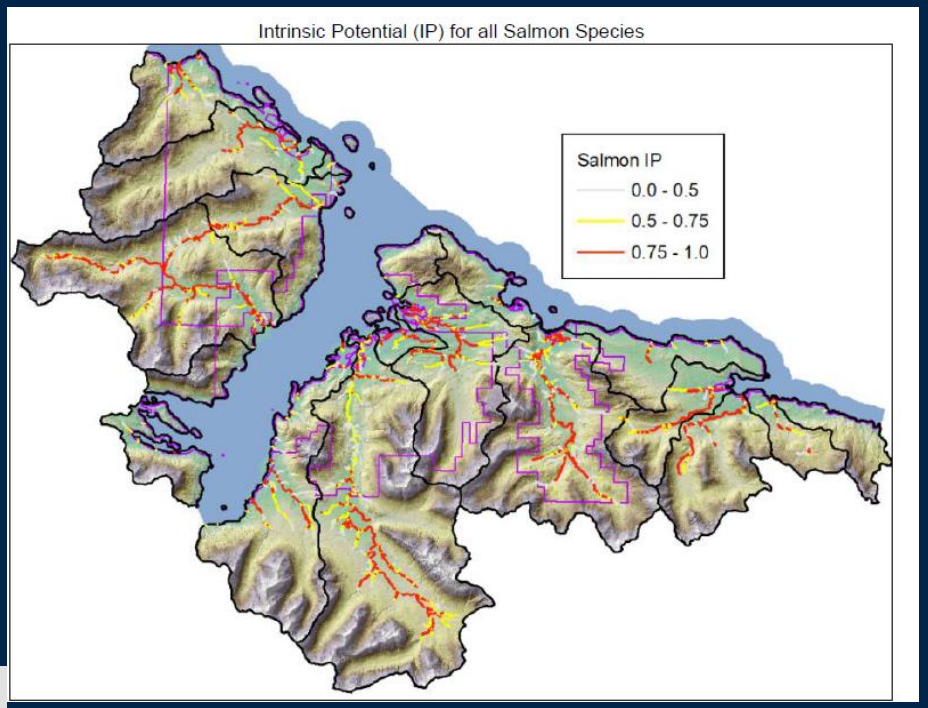
HOONAH NATIVE FOREST PARTNERSHIP

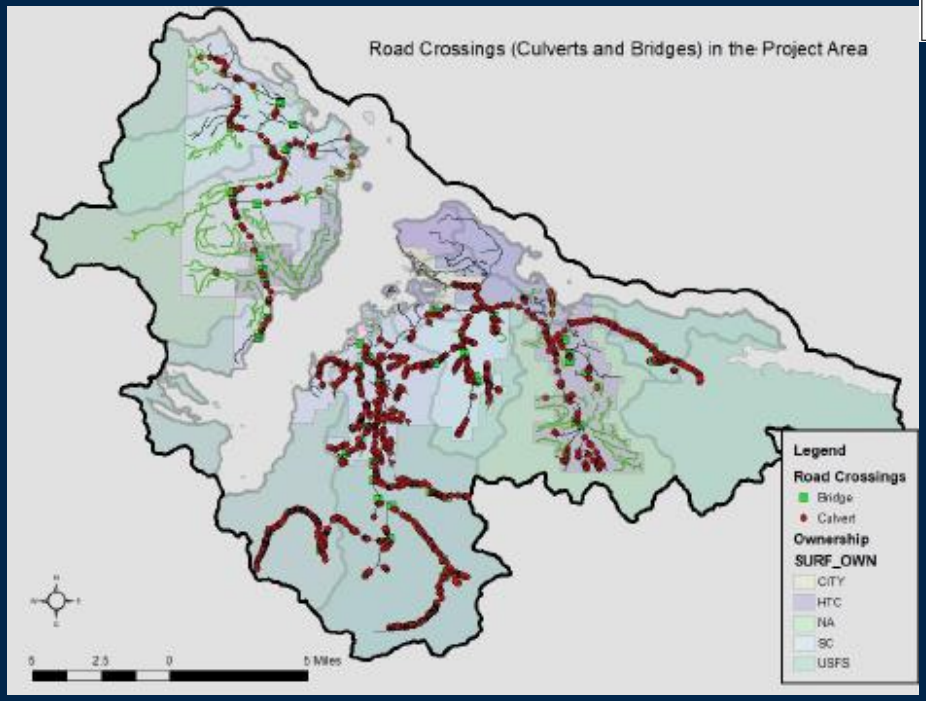
Technical Report #1 June 2020

OUR MISSION

Now and through the next century, the lands surrounding Hoonah will provide abundant resources that support our culture, economy, and community. The Hoonah Native Forest Partnership (HNFP), which includes public and private landowners, will promote sustainable economic development, local workforce employment, ecological restoration, and resource management, with the goal of ensuring the conservation of fish, wildlife, and forest resources. Through involvement in this partnership, today's citizens of Hoonah, as well as succeeding generations, will have improved potential to benefit from subsistence resources, such as blueberries, fish, wildlife, and future employment opportunities afforded by sustainable management of these lands

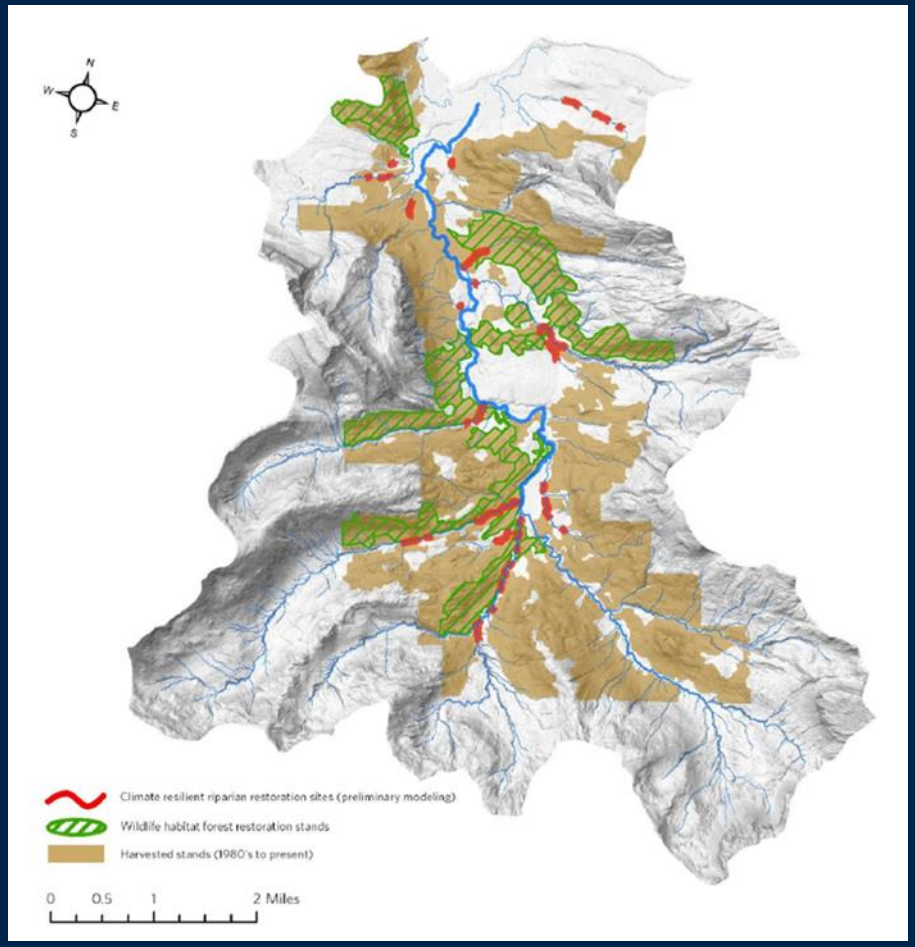
Value and Risk





Habitat potential and risk of sediment delivery from road crossings

Consider climate change and opportunities for building resilience



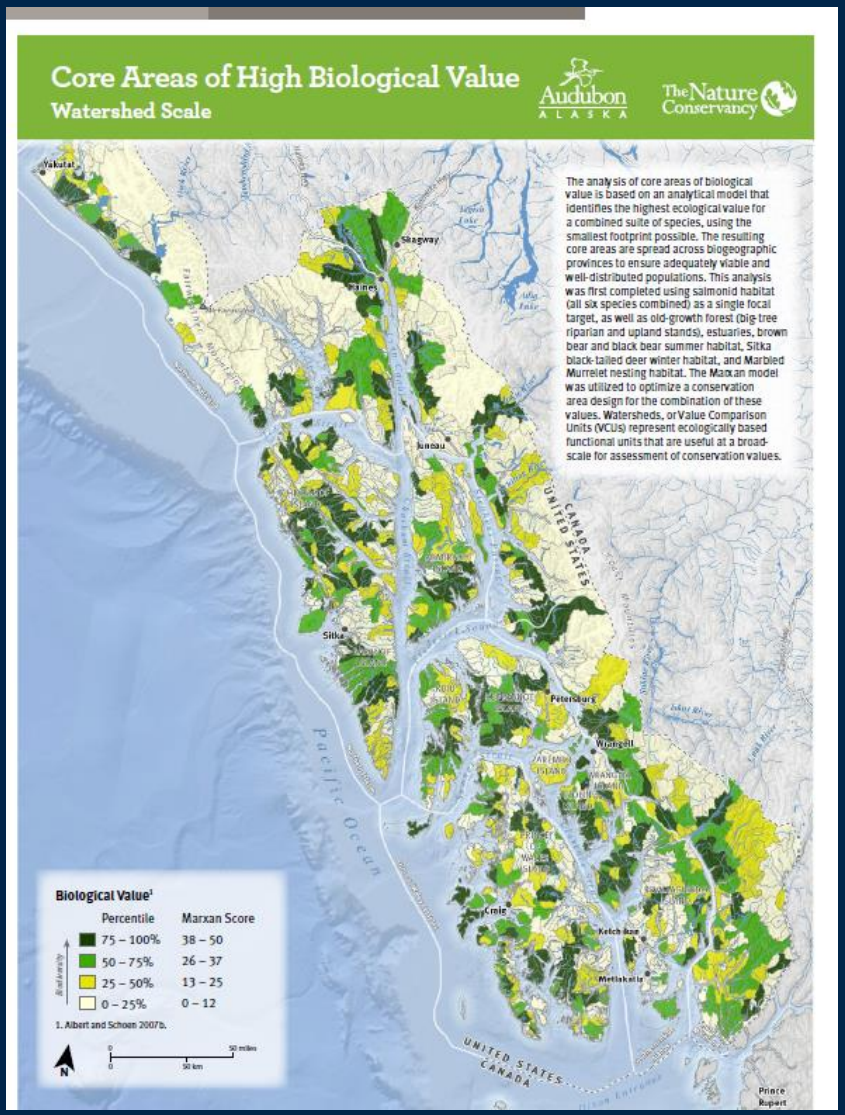
- Maps and tables identify relevant information to implement projects
- Consider ALL opportunities

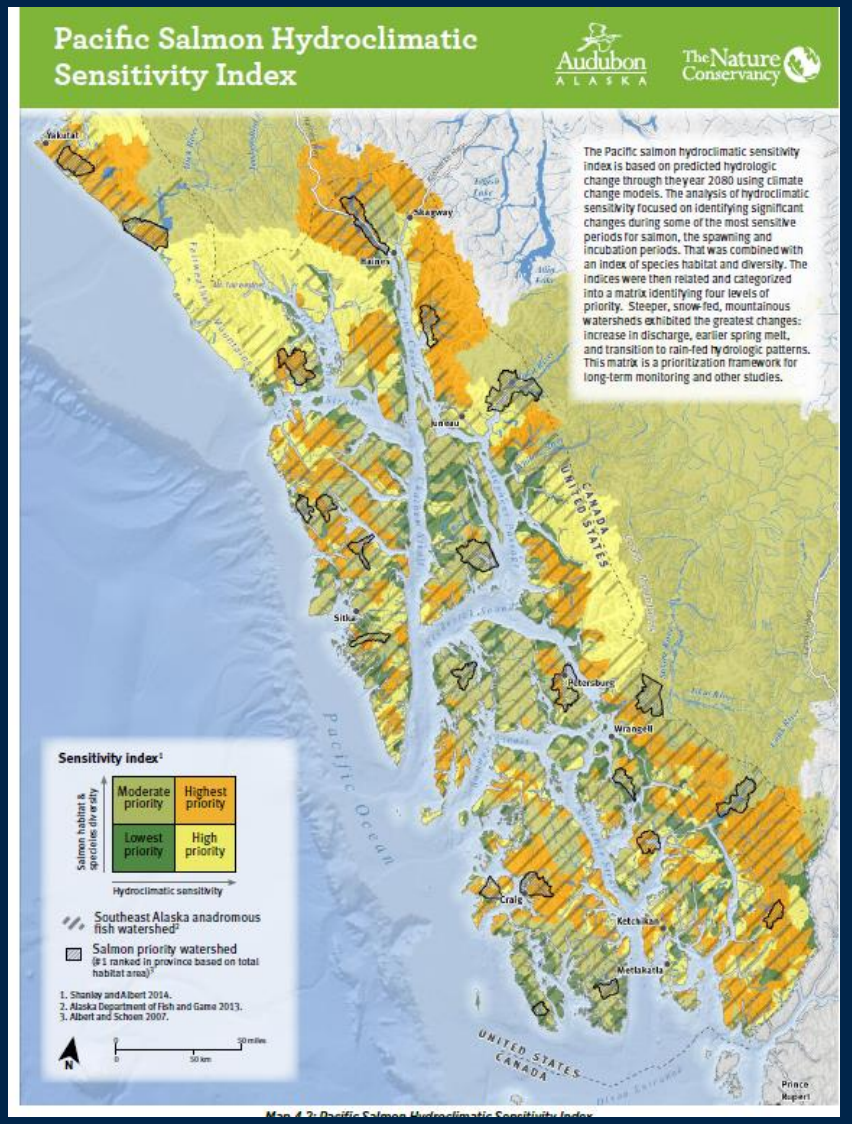
Table 60 Gartina Creek High and Medium Priority Opportunities

Project Type	Identification	Owner	Outcome
Water Quality	HNFP ID 8025	Sealaska	Improve Water Quality
Water Quality	HNFP ID 8028	Sealaska	Improve Water Quality
Water Quality	HNFP ID 8032	Sealaska	Improve Water Quality
Water Quality	HNFP ID 8034	Sealaska	Improve Water Quality
Water Quality	HNFP ID 8061	Sealaska	Improve Water Quality
Water Quality	HNFP ID 8062	Sealaska	Improve Water Quality
Passage	HNFP ID 8502City	City	Improve Passage for Fish
Passage	HNFP ID 8502City	City	Improve Passage for Fish
Water Quality	HNFP ID 8502City	City	Improve Water Quality

ECOLOGICAL ATLAS OF SOUTHEAST ALASKA

Audubon
ALASKA





Map 4.2: Pacific Salmon Hydroclimatic Sensitivity Index

Tips for successful restoration planning

- Be inclusive
- Meet early and often
- Take adequate time to plan
- Maintain consistent and organized data
- Know your goals and objectives
- Identify values
- Evaluate risks
- Weigh values and risks to develop restoration opportunities
- Prioritize actions (include all parties)
- Implement projects and monitor outcomes
- Report out