

Chehalis Basin Strategy

Aquatic Species Restoration Plan (ASRP)

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What Is the Aquatic Species Restoration Plan?

- Comprehensive watershed restoration plan
- Support habitat function, ecosystem processes, aquatic/semi-aquatic species, human uses
- Protect, improve and create sustainable ecosystem processes/functions

Species and Habitat

Salmonids, Other Fish, Amphibians, Waterfowl





Topics

- Work to date - Research, Schedule, Conceptual Model
- Strategies - Process, Role of Ecosystem Diagnosis and Treatment (EDT), Other modeling
- Next Steps - Integration, Assistance from local experts

Research/Modeling

Research

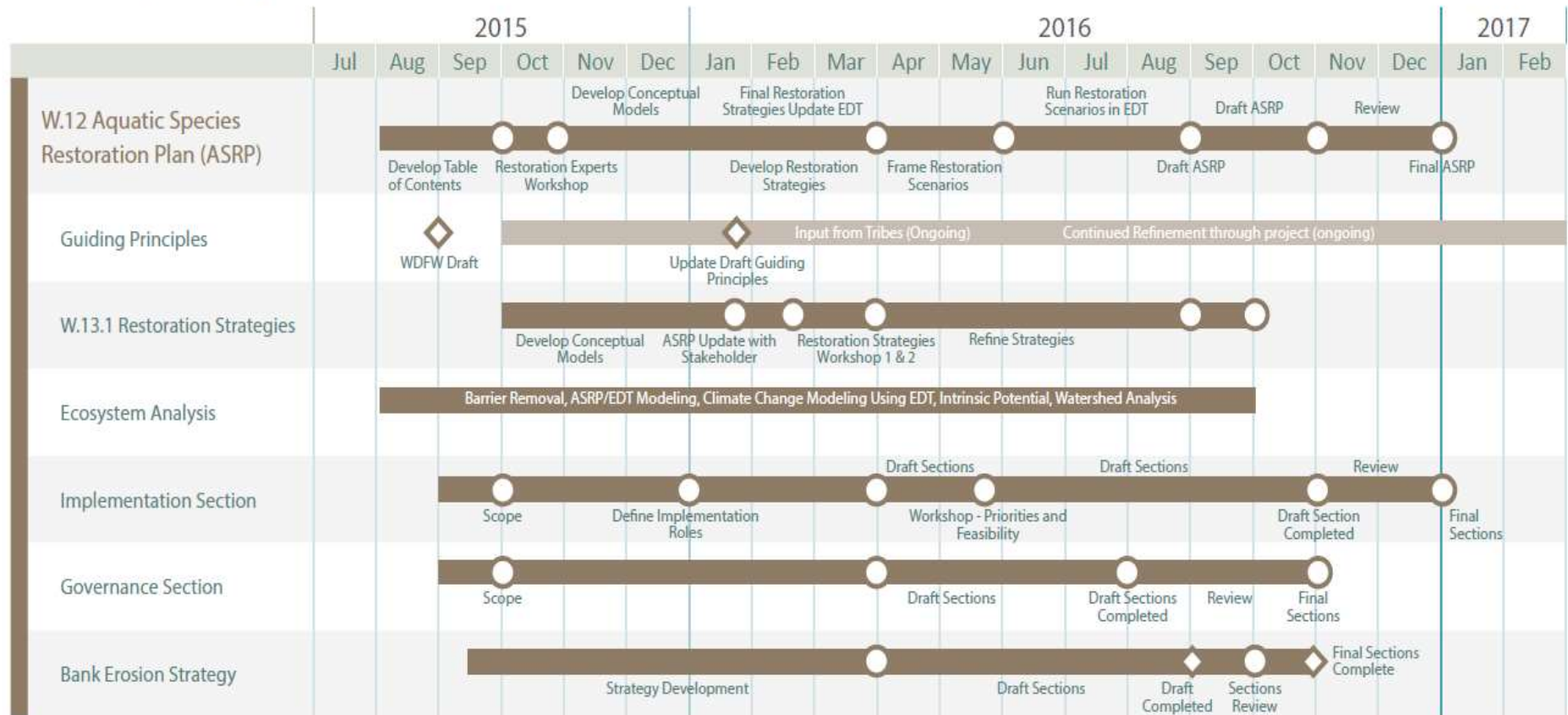
- *Salmon* – telemetry, population structure, spawner abundance, diversity
- *Non-salmon* – presence, distribution
- *Amphibians* – egg mass (intensive, extensive), instream, stream associated, off-channel habitat mapping, invasive species
- *Waterfowl utilization*

Modeling

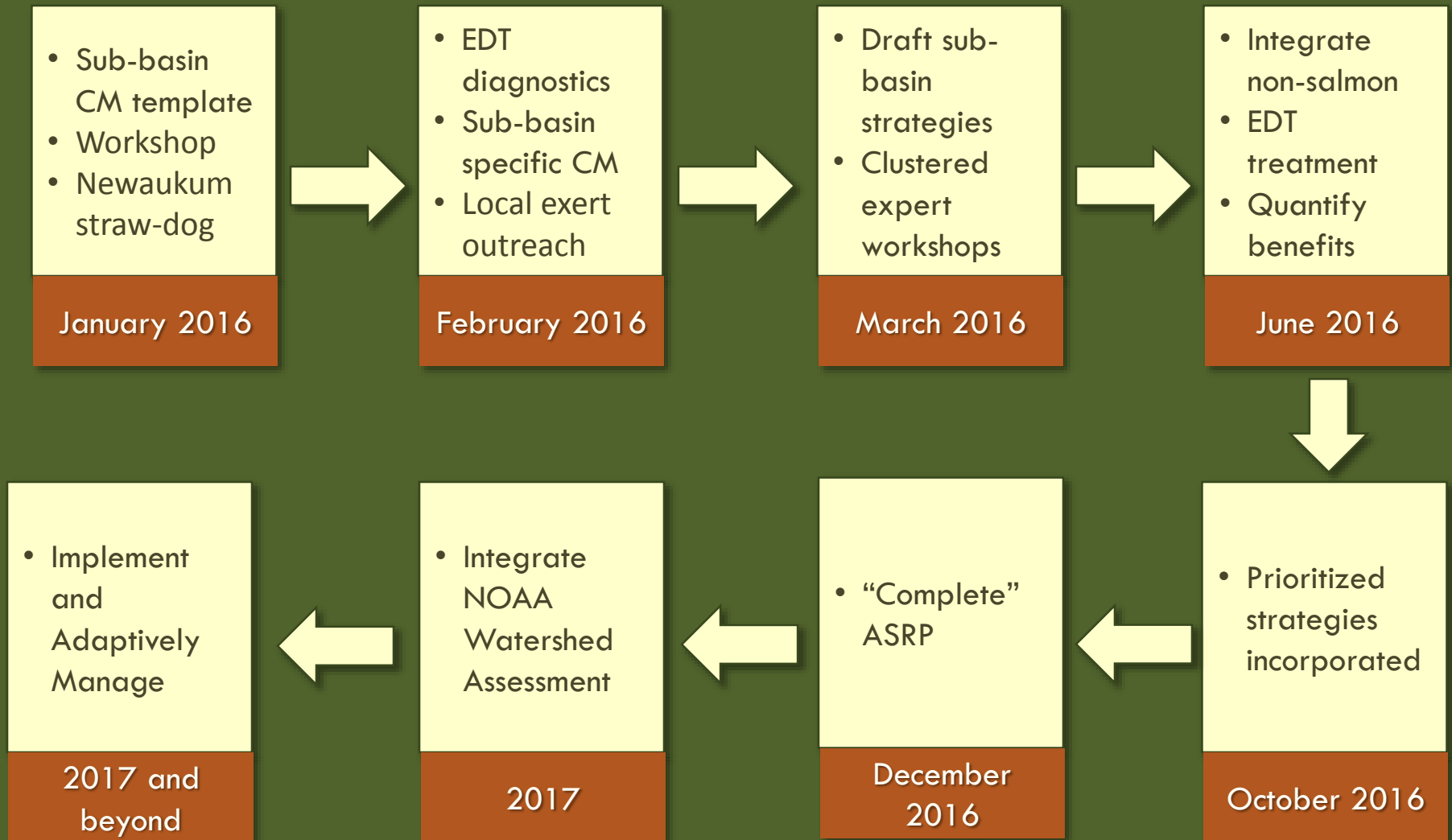
- *EDT* - salmon
- *PHABSIM* - fish
- *Watershed Assessment* - landscape change, restoration potential/site identification, incorporates fish and non-fish
- *Occupancy* – amphibians, non-salmon
- *Inundation* – historical, current

Schedule

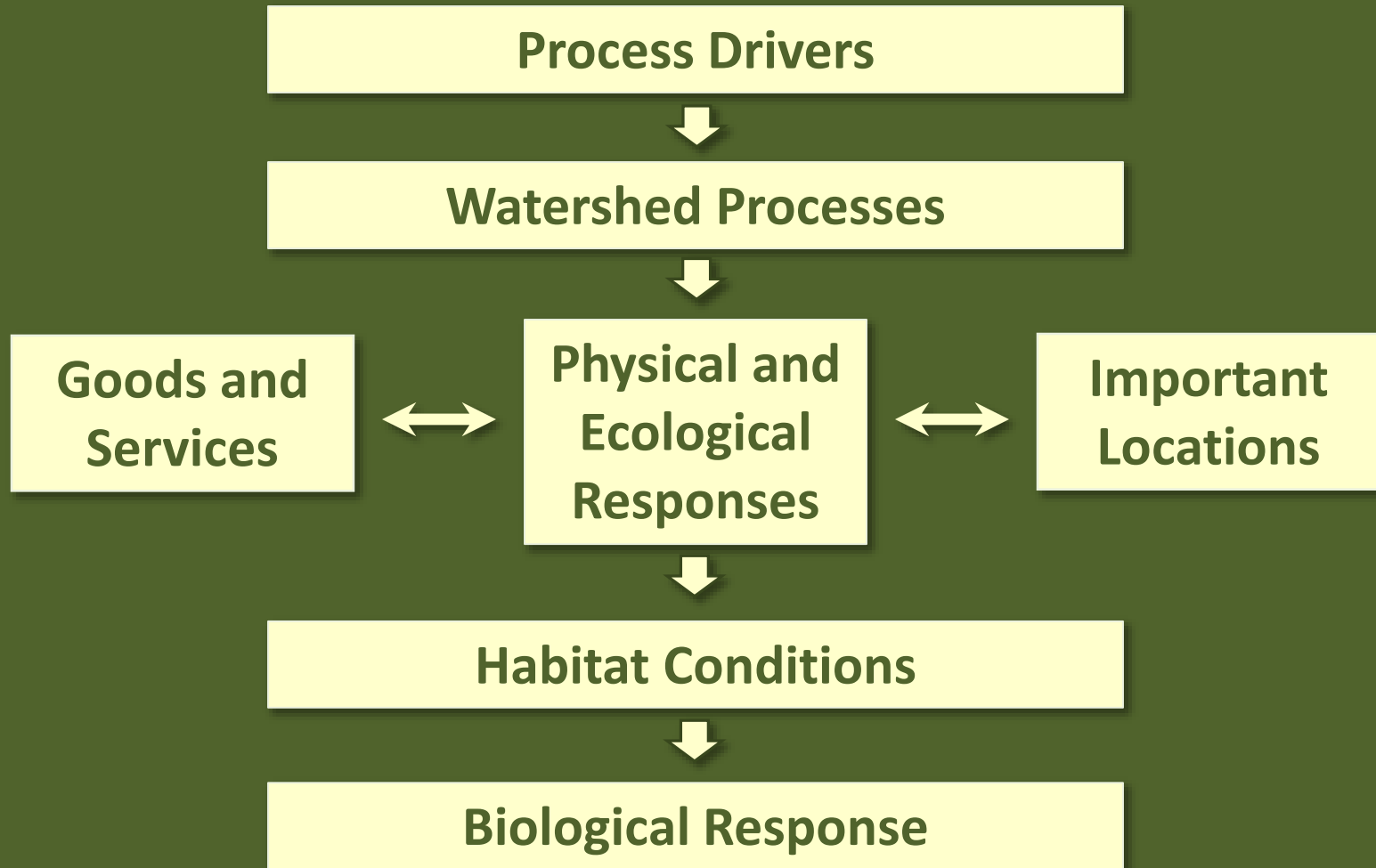
Draft Aquatic Species Restoration Plan



Process Schedule



Simple Conceptual Model



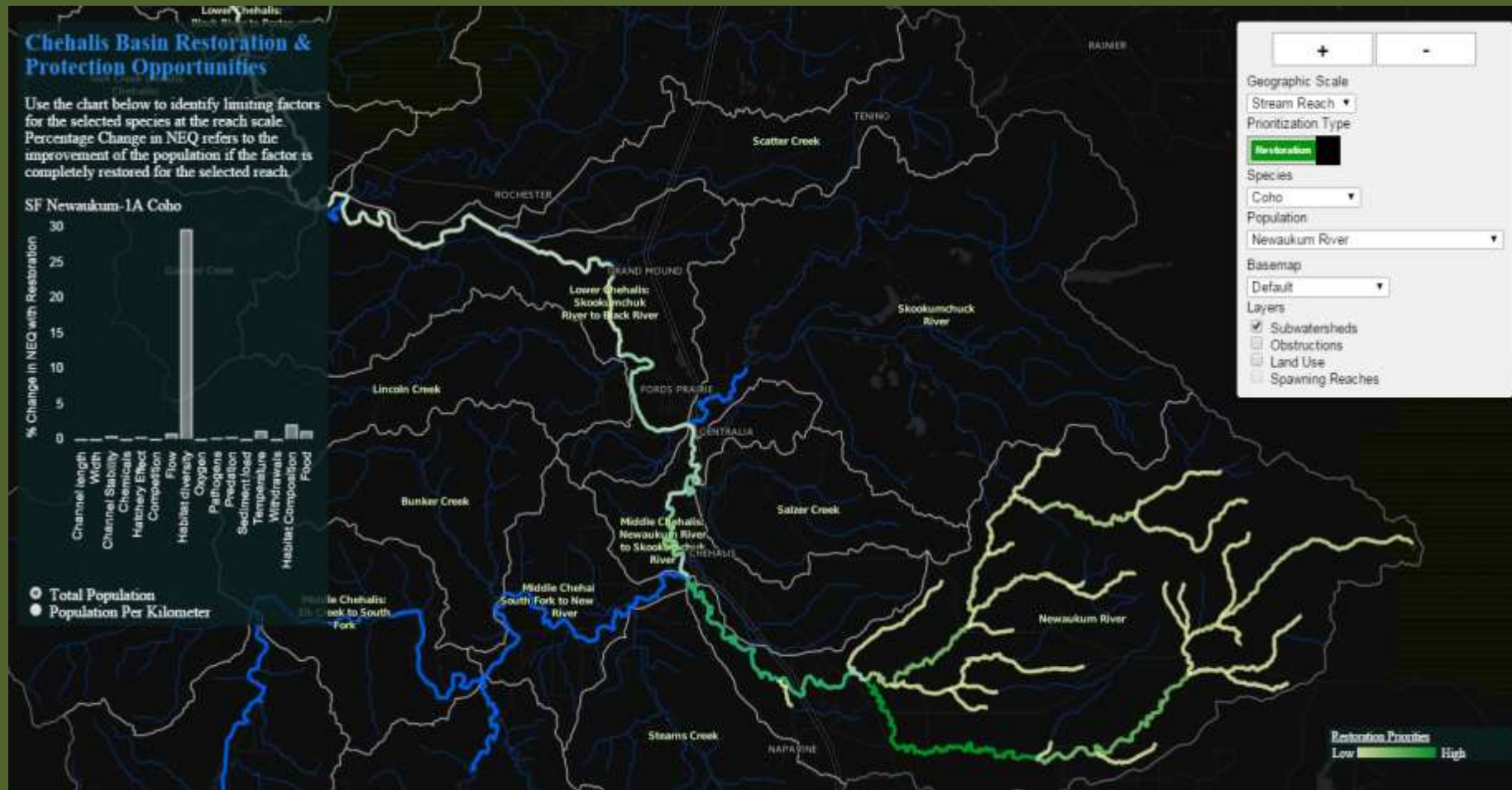
Modeling - Ecosystem Diagnosis and Treatment (EDT)

Conceptual model of *salmonid* habitat relationships, life history; Supports development of restoration strategies

- Ecosystem - evaluate habitat potential for anadromous salmonids (Chinook, coho, chum, steelhead)
- Diagnosis - Limiting conditions by species, life stage, reach, population
 - Sub-basin restoration potential; Prioritization of sub-watershed/reach potential based on benefit from protection/restoration
- Treatment - Evaluation of change with restoration actions and differing flood control alternatives

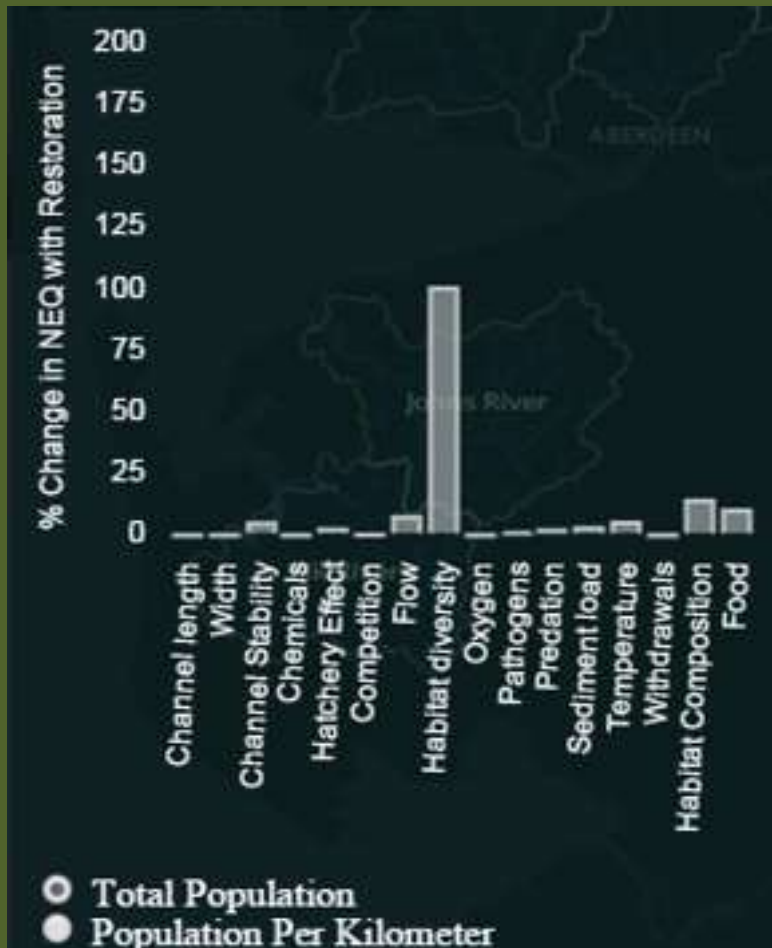
EDT Restoration Priorities

Coho

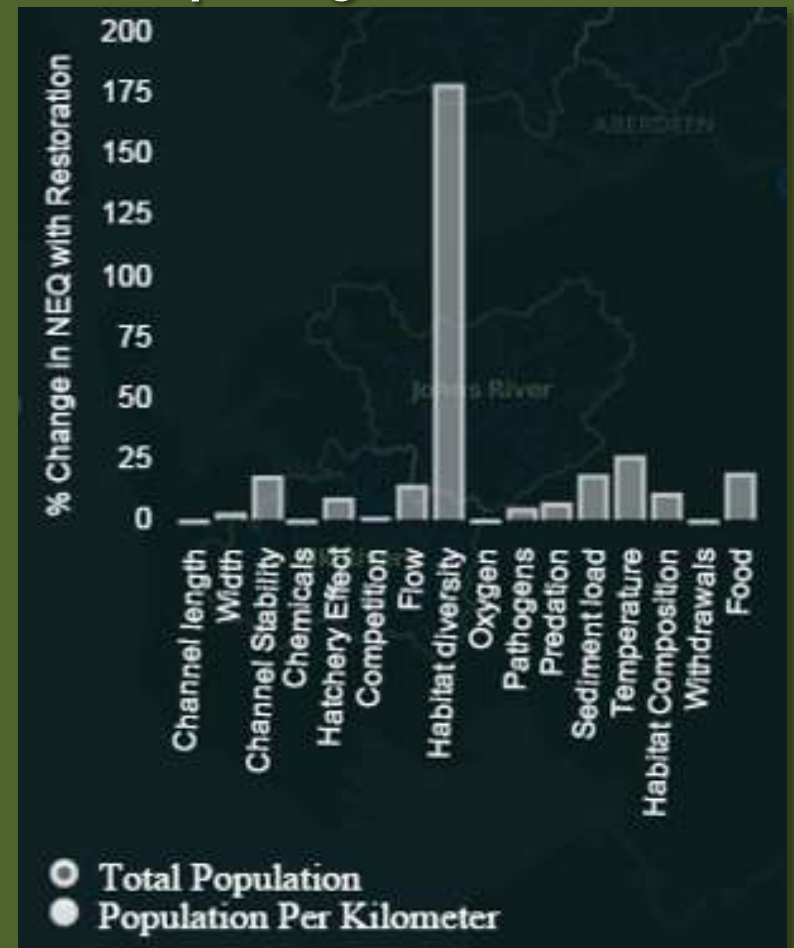


EDT Limiting Habitat Condition

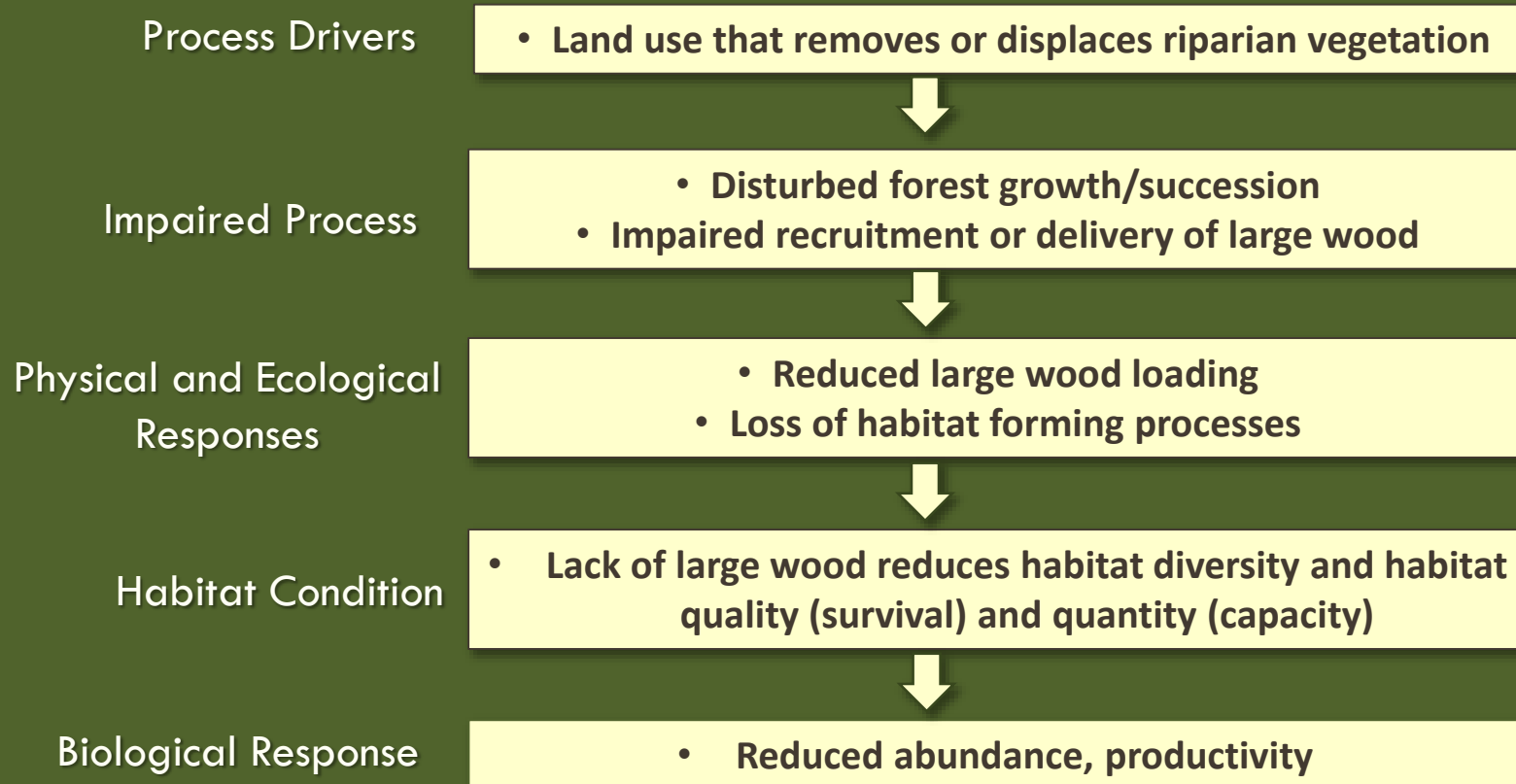
Coho



Spring Chinook



EDT Strategy (Newaukum)



Restore riparian forest processes > large wood quantity \Rightarrow
improved coho and spring-run Chinook abundance

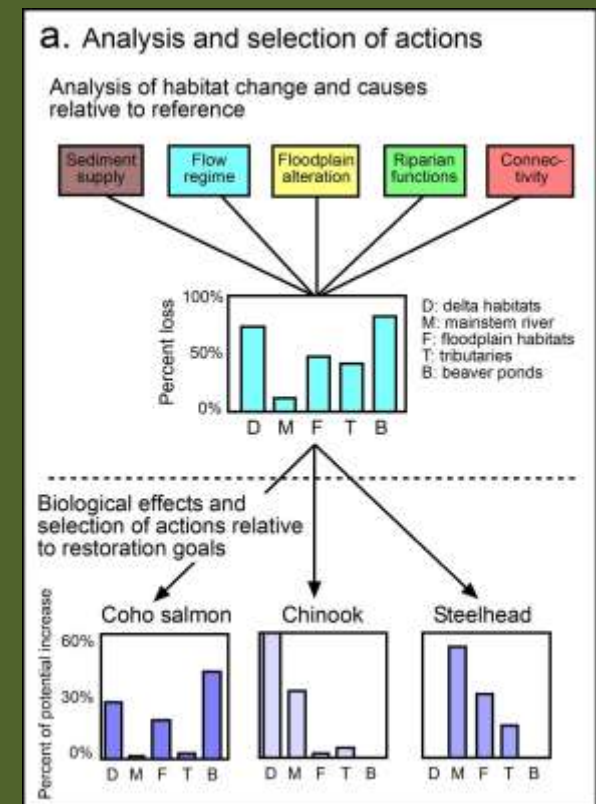
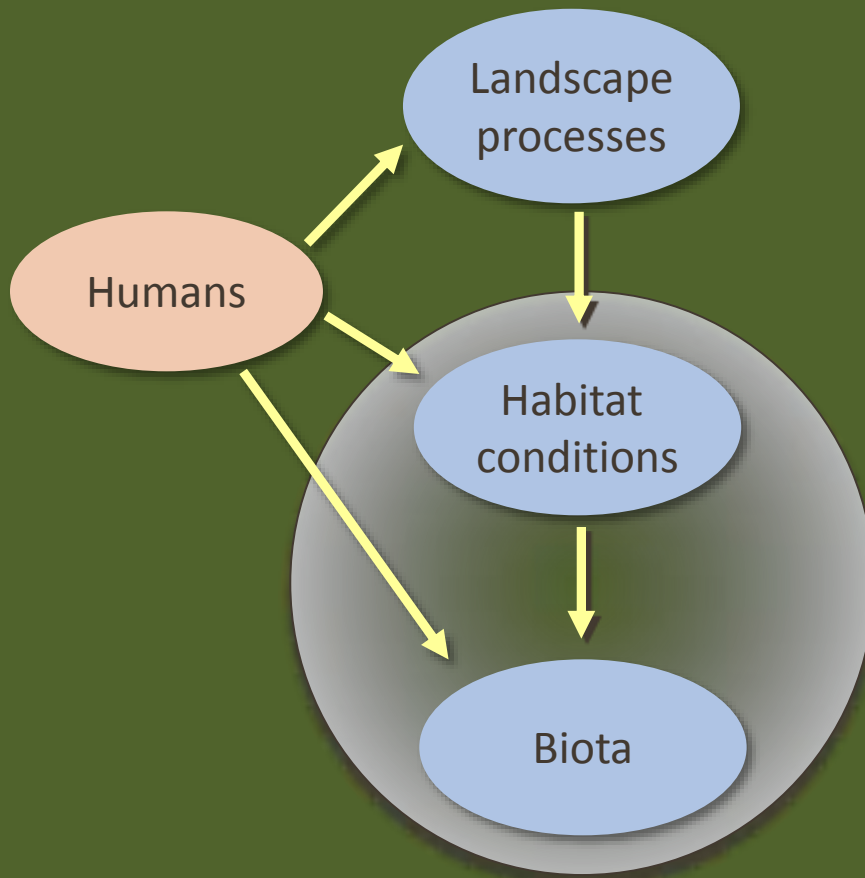
Other Modeling - Watershed Habitat Assessment

- Identify habitats that limit population recovery
- Identify restoration scenarios that provide the largest benefit
- Based on salmonids, adding requirements for amphibians, waterfowl, other fish
- Data - Historical and current habitat by type (tributary, river, beaver pond, lakes); Fish density and survival by habitat type/condition; Natural and current watershed processes (sediment supply, riparian function, connectivity)

Watershed Habitat Assessment

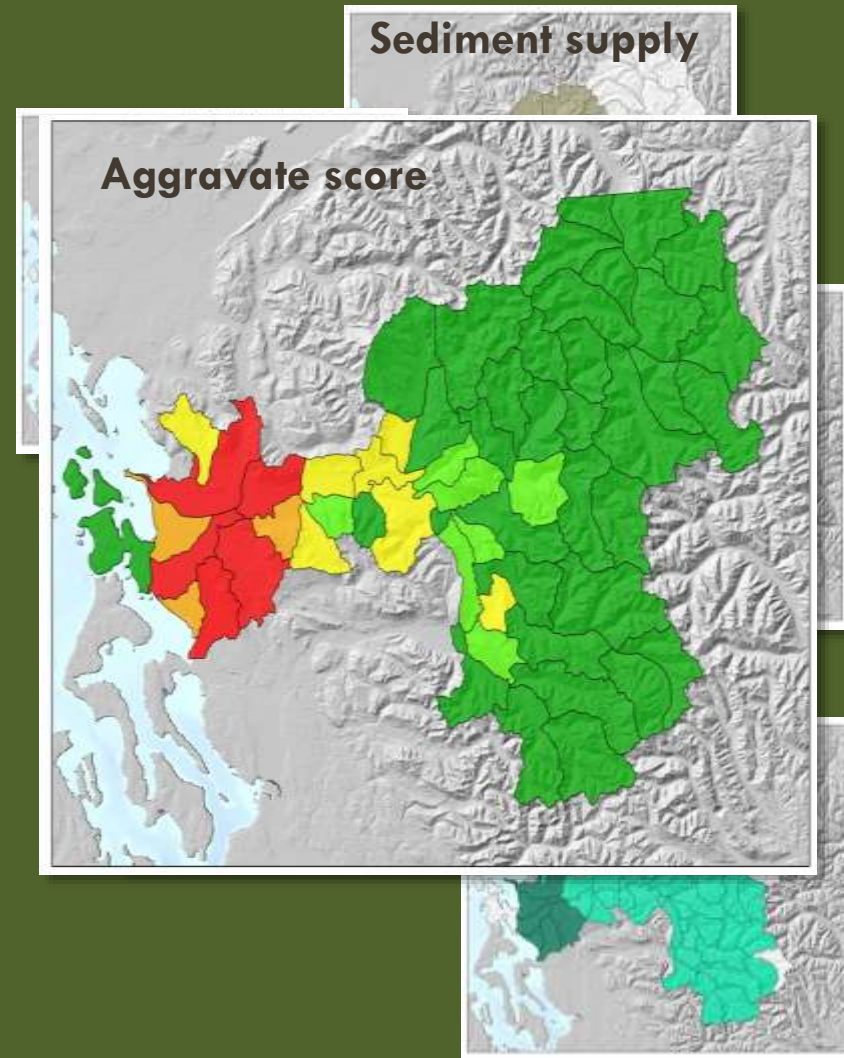
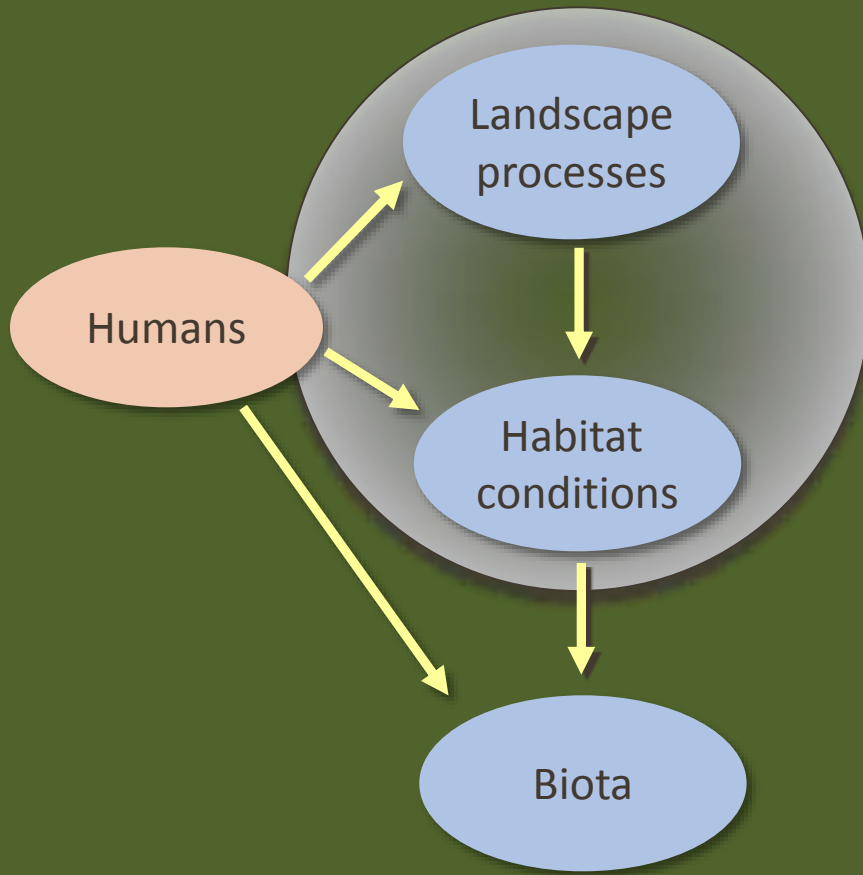
Q1: How have habitats changed and altered biota?

Summarize changes, quantify importance of habitat loss by species



Watershed Habitat Assessment

Q2: What are the root causes of biological change?



Still More Modeling



Occupancy - amphibians, other fish, waterfowl

Inundation - historical (1930s, 1970s, 1990s) and current





Next Steps

- Input from stakeholders (March)
- Update models with new/on-going research (on-going)
- Overlay EDT, Watershed Assessment, Occupancy, Inundation (summer)
- Evaluate and prioritize restoration strategies (summer/fall)

Questions/Discussion



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