Northwest **Power** and **Conservation** Council

July 5, 2017

MEMORANDUM

TO: **Council members**

FROM: **Kendall Farley**

SUBJECT: **Presentation by the Cowlitz Indian Tribe on regional restoration work**

BACKGROUND:

Presenter: Rudy Salakory, Aquatic Habitat Program Manager, Cowlitz Indian Tribe

Summary: Rudy Salakory will be providing background and history about the Cowlitz Indian Tribe as well as the Tribe's Habitat Restoration Program. Details will also be given on their work with the Lower Columbia IMW in Abernathy Creek and with Bonneville on the Wallooskee Youngs Confluence Restoration project to restore a tidal marsh in the Columbia River estuary. Rudy will also share about the Aquatic Habitat Program's work on assessing thermal regulation and water temperature issues in Southwest Washington and Northwest Oregon rivers, and developments surrounding beaver reintroduction into upper watersheds.

Background: Rudy Salakory is the Aquatic Habitat Program Manager for the Cowlitz Indian Tribe. He graduated from Washington State University, where he received his BS in Biology and did postgraduate work on competition and facilitation between colonizing species in primary succession on Mount St. Helens. Over the last eight years, Rudy has developed an Aquatic Habitat Restoration program which focusses on restoring habitat forming

processes throughout Southwest Washington and Northwest Oregon. This program has developed, funded, and implemented 27 projects that restore floodplain connectivity and habitat for salmonids and other species central to the Cowlitz People.

Cowlitz Indian Tribe Habitat Restoration Program

Photo Credit: Rudy Salakory Taken on the upper Cowlitz River, 2012

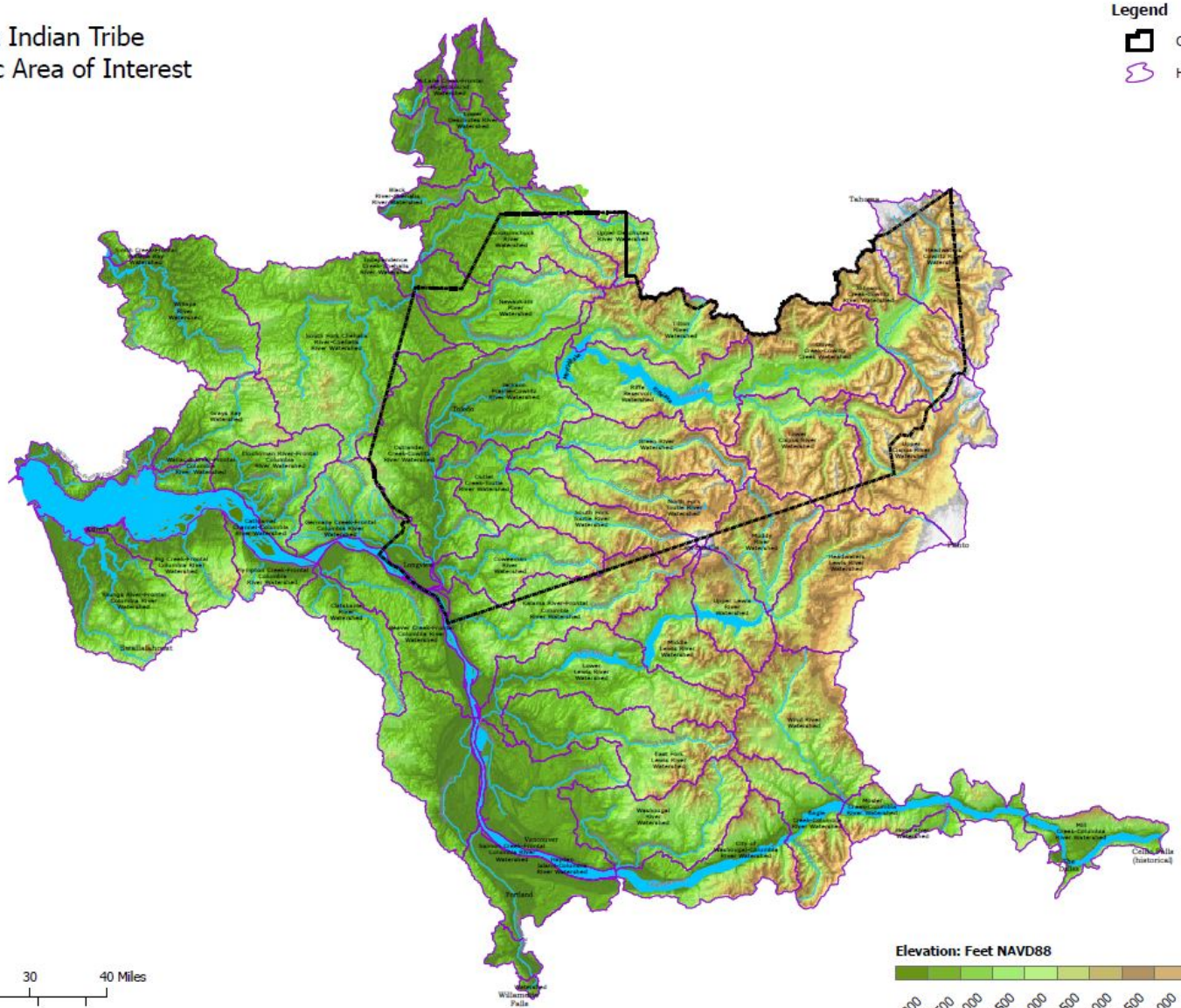
Cowlitz Indian Tribe

Natural Resources Department

Taylor Aalvik, Director

Rudy Salakory, Aquatic Habitat Restoration Program

Cowlitz Indian Tribe
Historic Area of Interest



Cowlitz Indian Tribe Natural Resources Department

To protect, conserve, restore and promote culturally relevant species and landscapes integral to the unique identity of the Cowlitz People. To further educate the community and inspire future leaders and participants in this vision

Habitat Restoration Program Goals and Philosophy

Goals:

1. Protect intact or functioning habitat
2. Restore habitat forming-processes

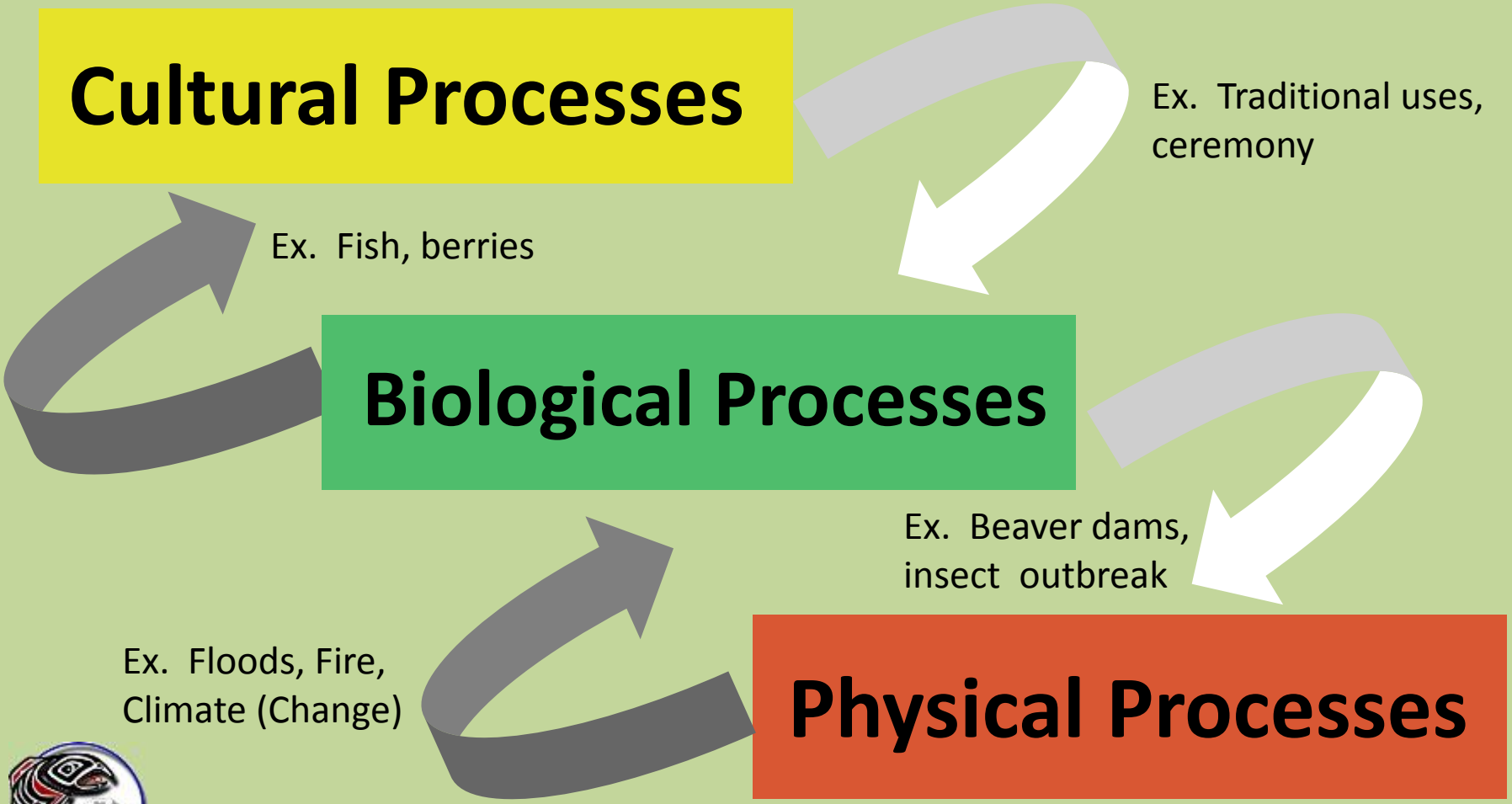
Objectives:

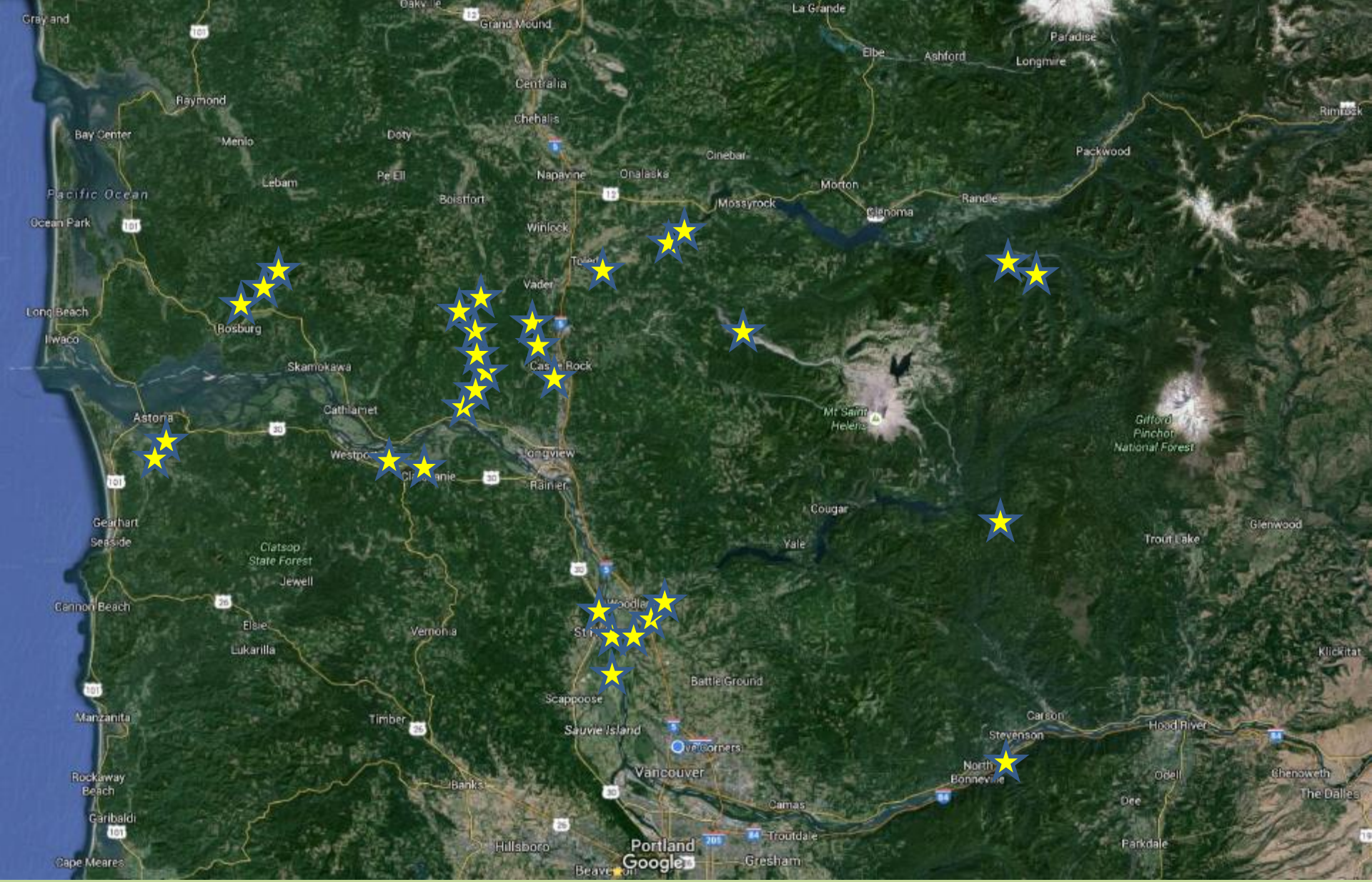
- Develop and maintain partnerships
- Assess and discover opportunities for habitat protection through acquisition
- Investigate and develop restoration priorities throughout Cowlitz country
- Fund habitat acquisition and restoration project implementation through grants and partnerships
- Monitor activities and define success (Adaptive Management)

Implicit Philosophy:

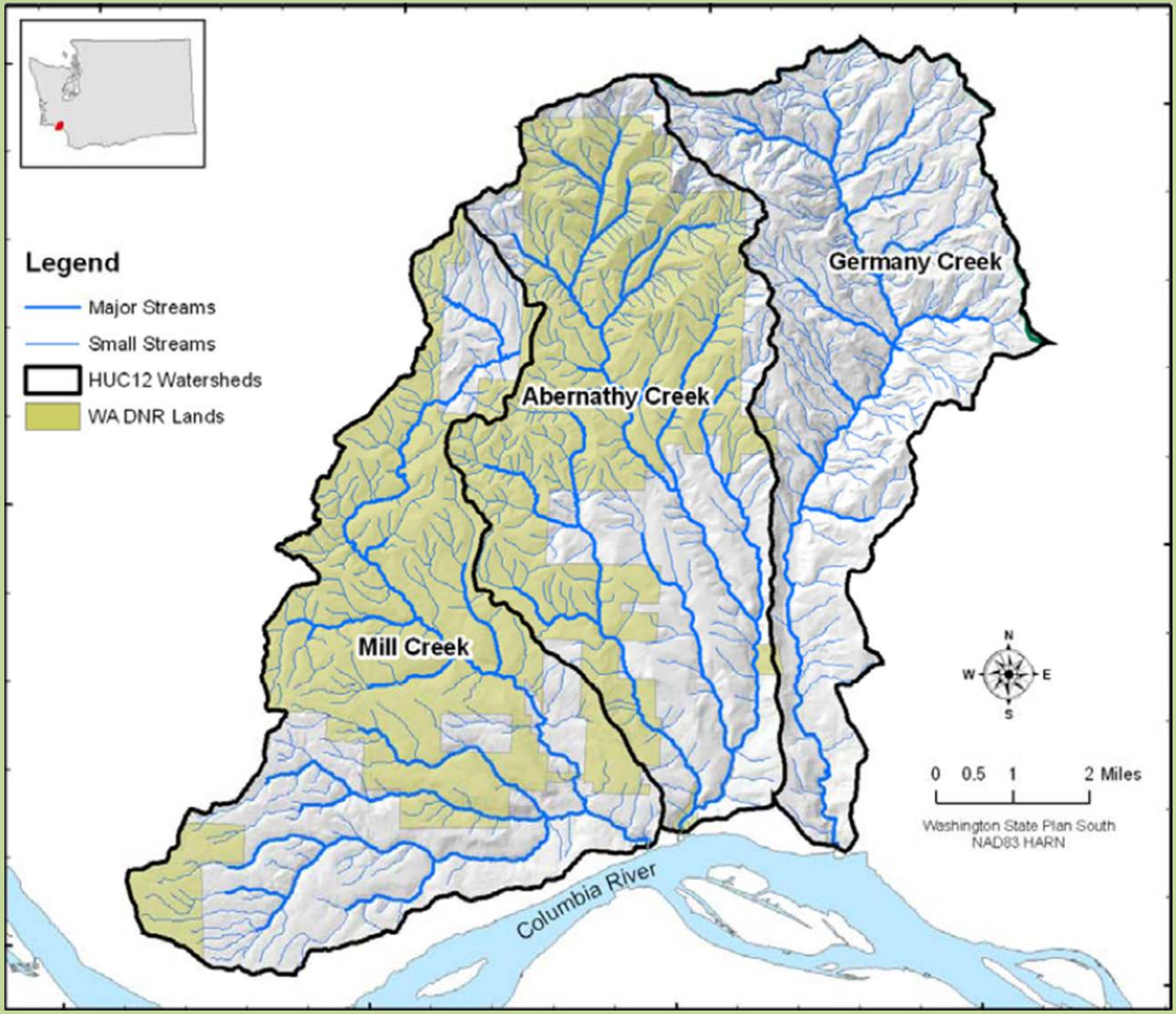
- Implement Process Based Restoration
- Protect and conserve places where habitat forming processes occur
- Recognize shifting baselines
- Embrace chaos

Interactions between landscapes and processes

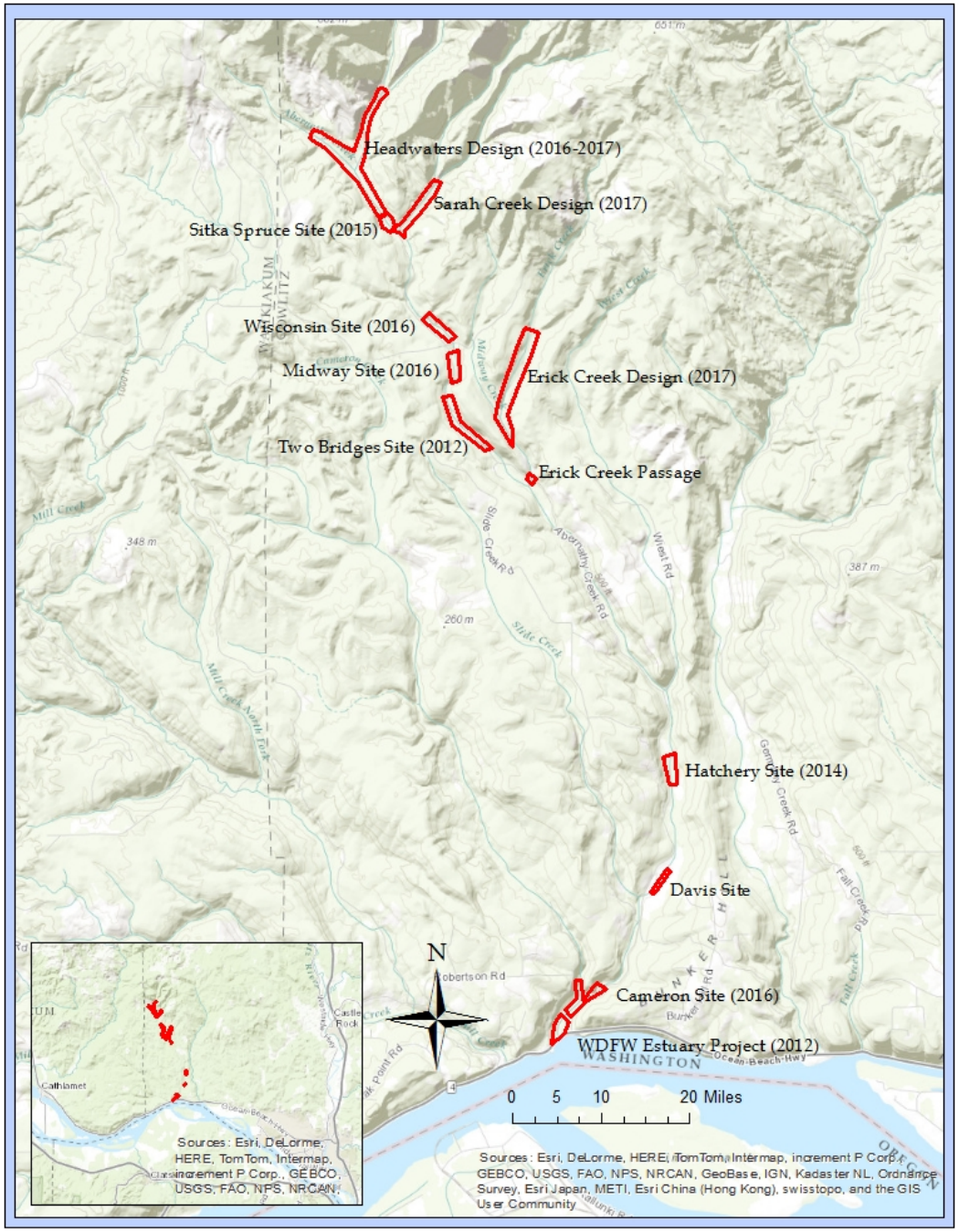



Pacific Ocean
Portland
Vancouver
Google

Lower Columbia IMW



Abernathy Creek IMW Projects

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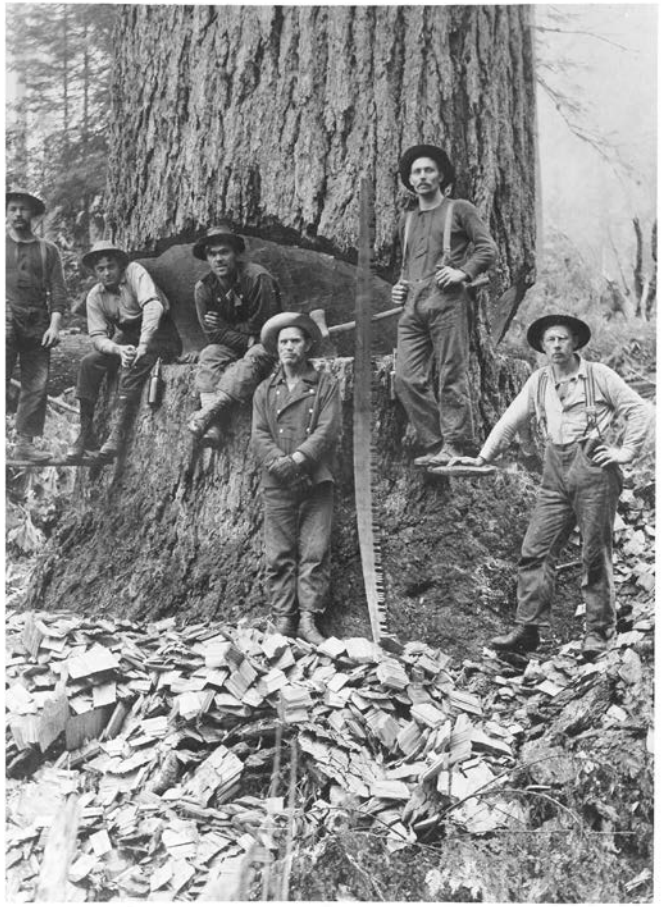
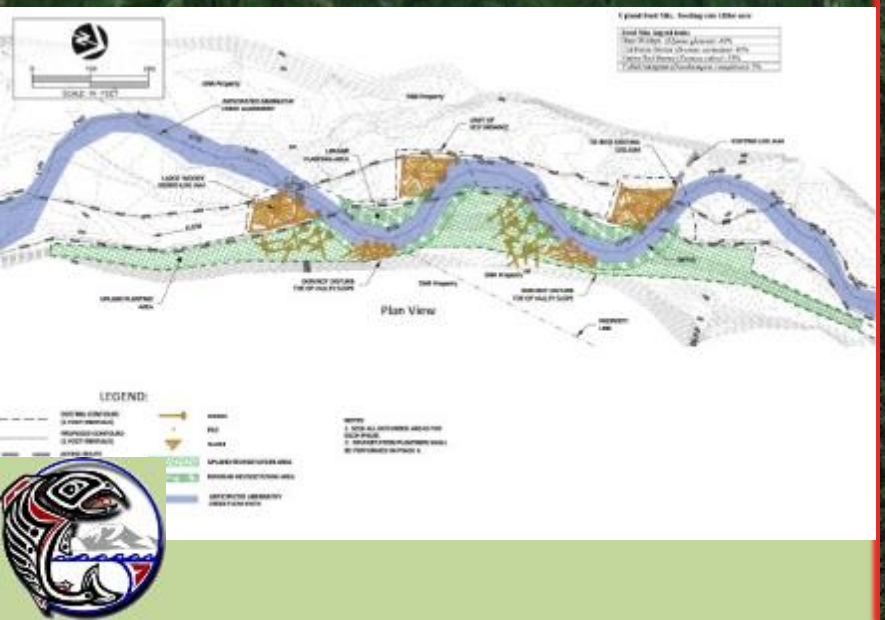
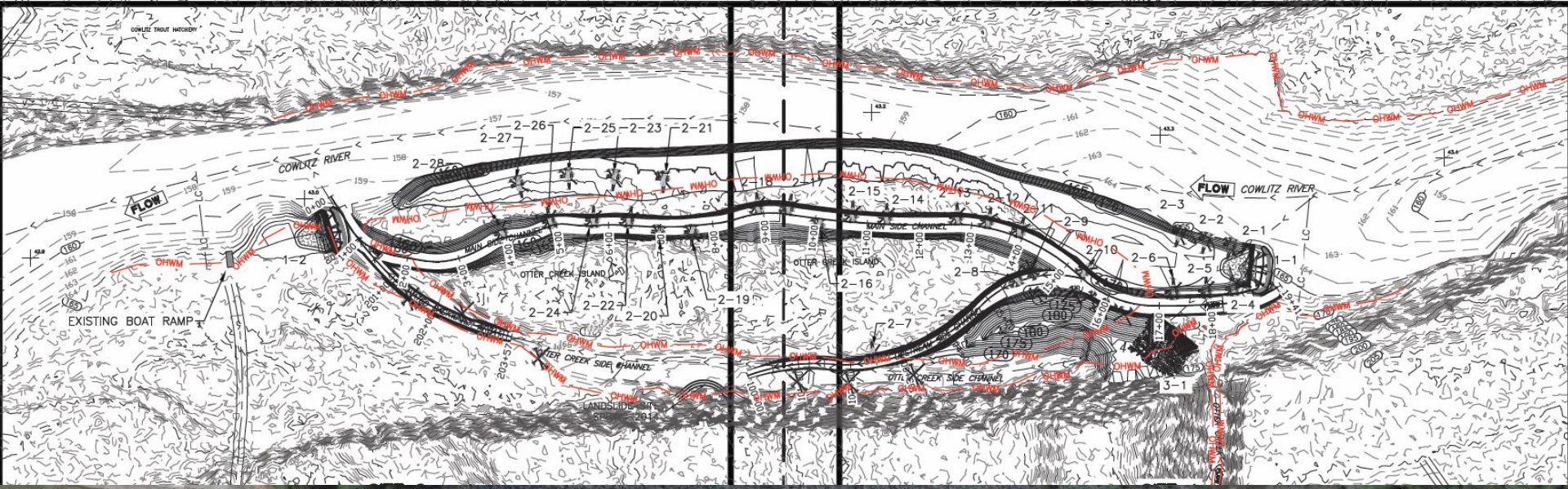



Camp. W. L. & T. Co
Midway Landing


Plan View
LEGEND:


CAT



Original Design Funded by RCO SRFB LCFRB PCSRF

Collaborating Agencies:

WDNR: Brian Hill, Allen Lebovitz, Nancy Marvin and Thomas Gorman

USACE: Ronald Wilcox

WDFW: David Howe, Scott Brummer, Steve West

WSDOT: David Smelser, Chris Regan, Mark Bakeman

NOAA: Michael MacDonald

WSDOE: Lori Kingsbury

FRA: Laura Shick

Tacoma Power: Leah Marquez-Glynn, Scott Gibson

Project Team:

Cowlitz Tribe: Peter Barber, Eli Asher, Rudy Salakory, Dalton Fry, Stuart Freitas

NSD: Tim Abbe, Rocky Hrachovec, Mike Ericsson, Deb Stewart

BNSF: Daniel MacDonald P.E., Danny Mesford, Megan Reagan, Stephen Semenick, Jeanette Widener, Jordan Widener, Ross Widener

BCI: Dave Porter, Dan Porter, Drew Porter

Natural Systems Design

BNSF

Washington Department of Fish and Wildlife

Washington State Department of Transportation

TACOMA POWER

Tacoma Public Utilities

Washington State Department of Natural Resources

FRA

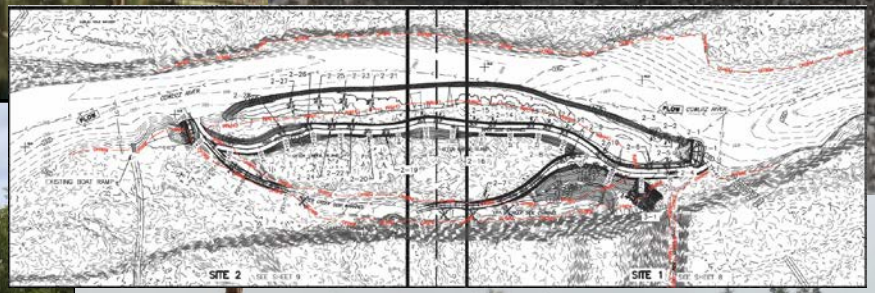


Photo Credits: Widener and Associates 2016, Natural Systems Designs

Photo Credits: Above: Widener and Associates 2016
Below: Google Earth

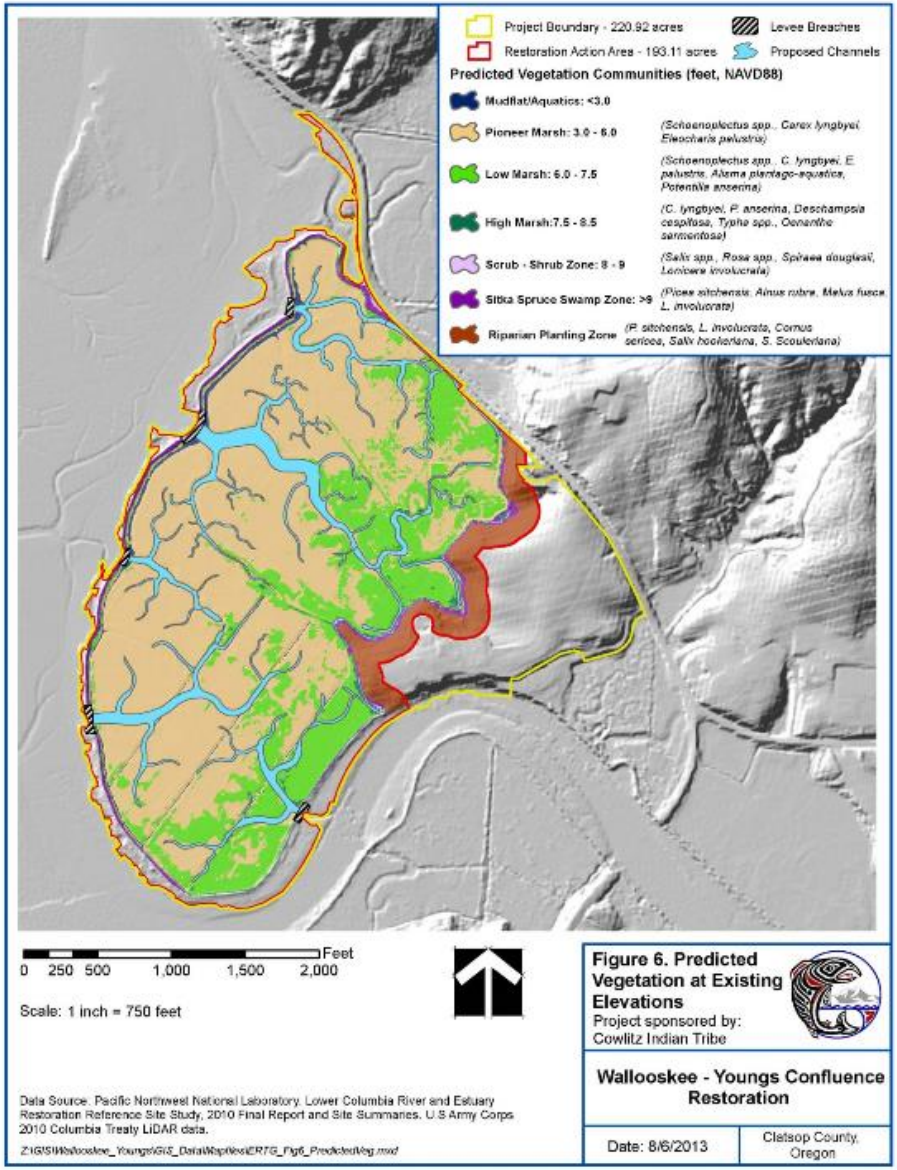


Figure 6. Predicted Vegetation at Existing Elevations
Project sponsored by:
Cowlitz Indian Tribe

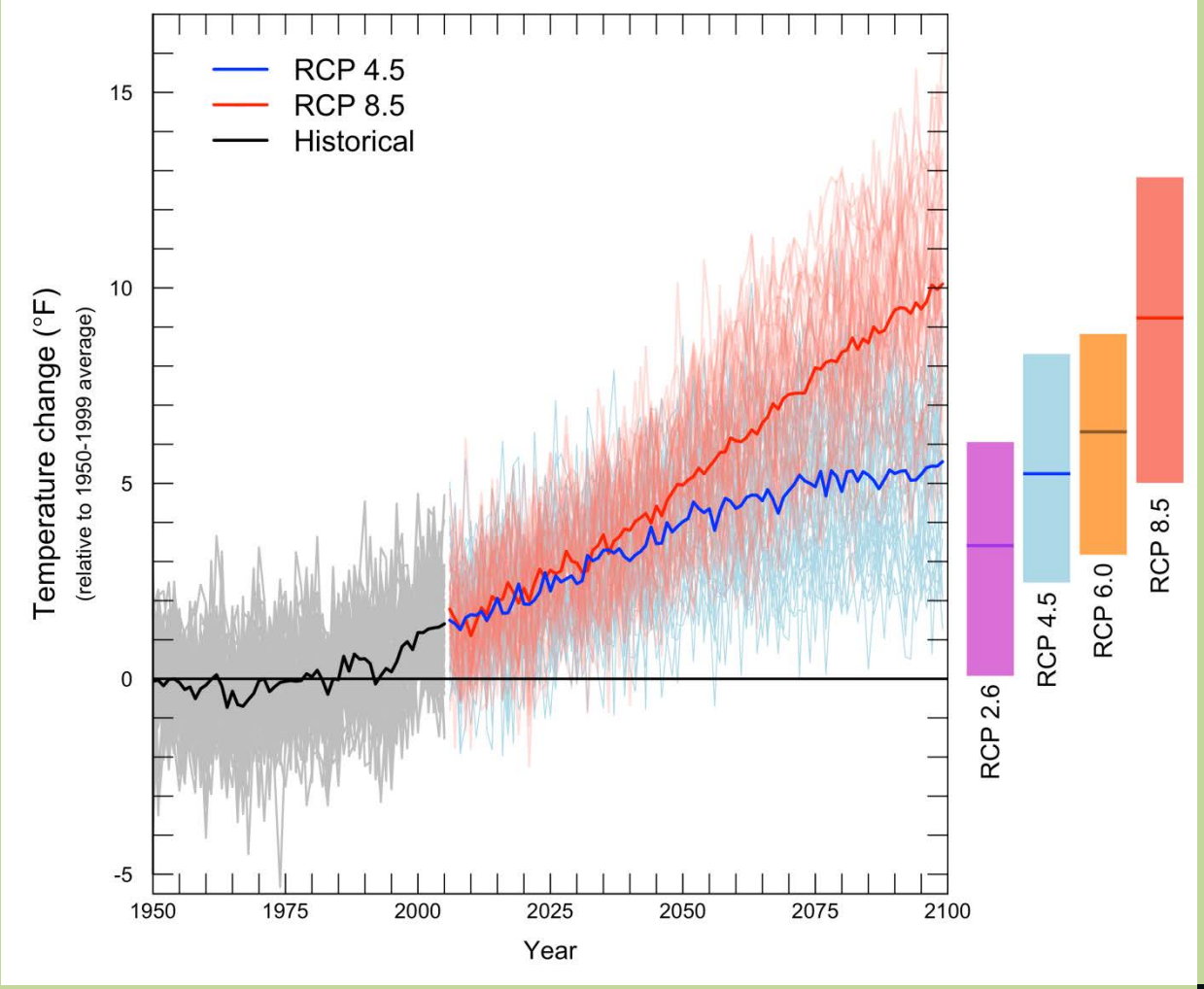
Wallooskee - Youngs Confluence Restoration

Date: 8/6/2013

Clatsop County, Oregon


202
Farm Ln
Nehalem Hwy

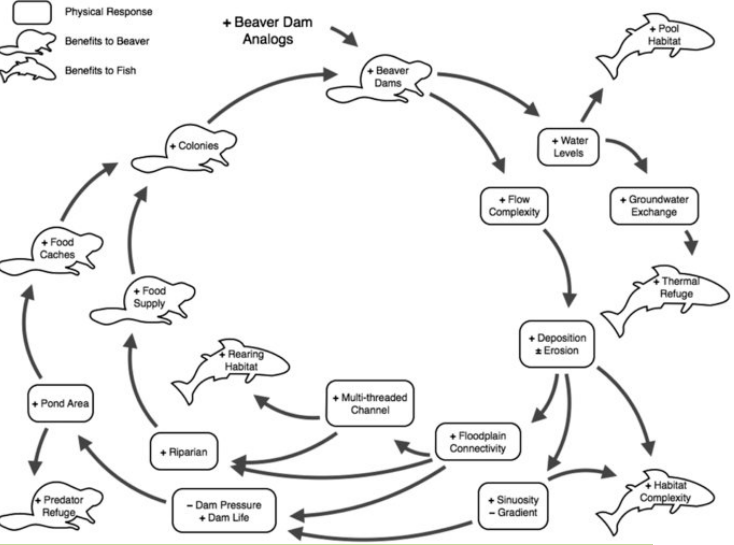

202
Farm Ln



The Cascades Snowpack Problem

Climate change models agree Cascade snowpack will be effectively gone by 2040 and will be rain dominant systems by the 2080's

How can we attempt to store water at high elevations, maintain summer base flows, regulate water temperature and protect habitat for fish and wildlife?



Beavers!

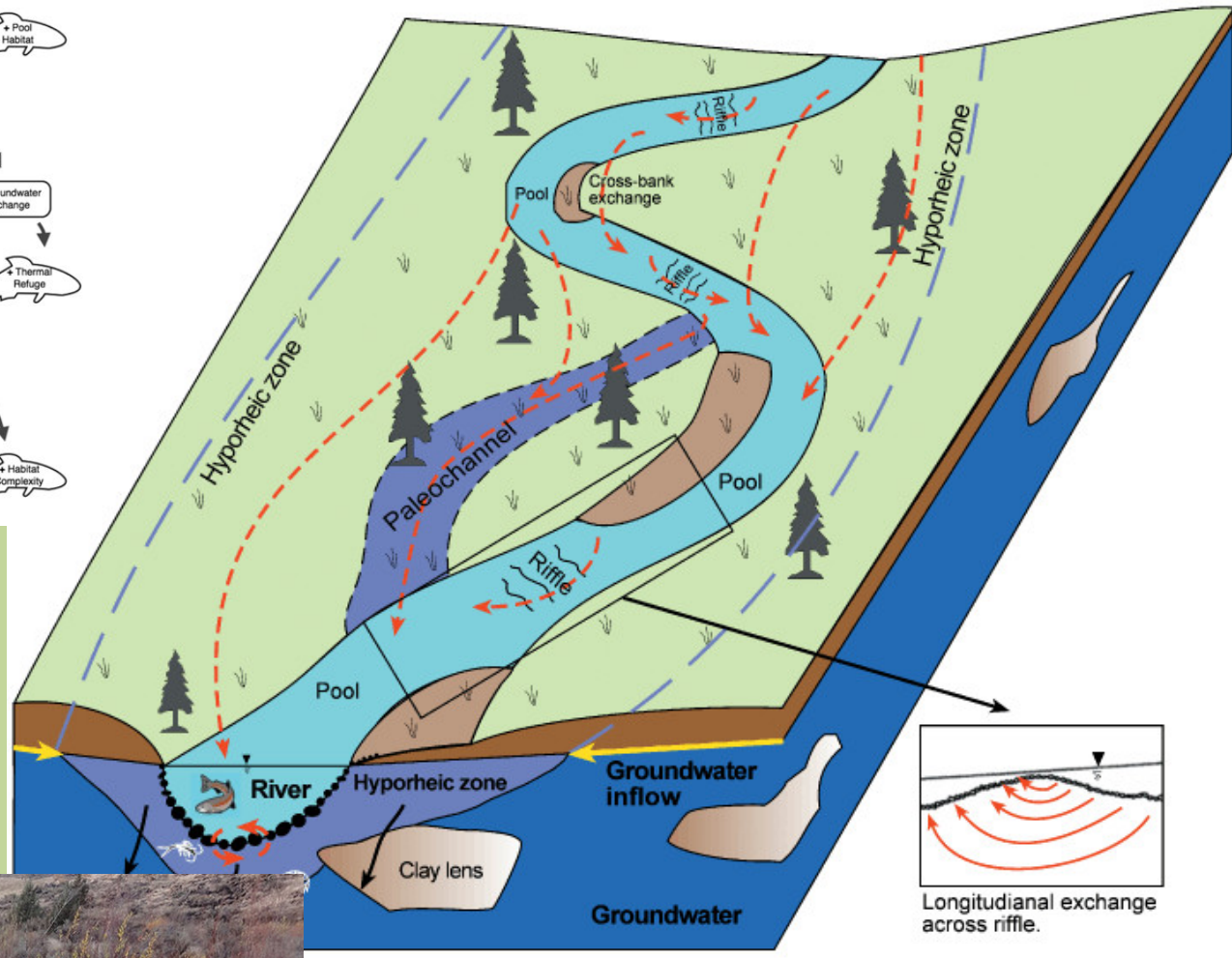
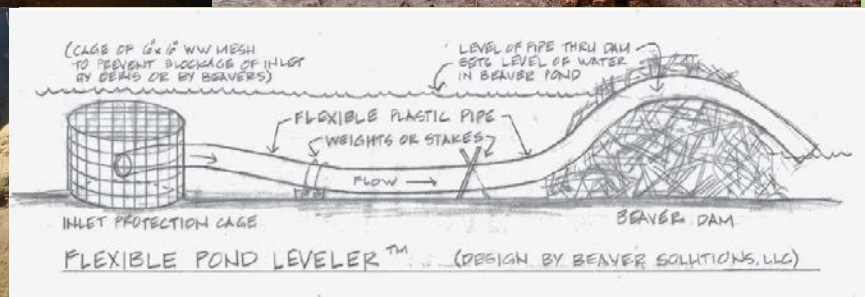


Image Credits:
Bouwes, N. (2016). Ecosystem experiment reveals benefits of natural and simulated beaver dams to a threatened population of steelhead (*Oncorhynchus mykiss*). *Scientific Reports, 6*.
doi:10.1038/srep28581
Tonina, D. Buffington J.M. (2009) Hyporheic Exchange in Mountain Rivers I: Mechanics and Environmental Effects *Geography Compass* 3(3):1063 - 1086
DOI: 10.1111/j.1749-8198.2009.00226.x

Free Labor!

Benefits:
Increased groundwater availability for forests and floodplains
Thermal regulation – hyporheic/groundwater interactions; residence time; lower downstream temperatures
Increased drought resistance/tolerance
Increased summer base flows
Habitat benefits
Fire resilience – increased fuel mosture and humidity; fire suppression water supply; safety zone for firefighters and refugia for wildlife; firebreaks;



Beaver Restoration Prioritization:

1. *Keep beavers where they are*
2. *Enhance habitat to facilitate beaver colonization*
3. *Translocate beaver to enhanced habitat too difficult to colonize naturally*

Pathway:

- Develop partnerships
- Remote sensing
- Habitat restoration and enhancement
- Headstarting
- Translocation
- Monitoring

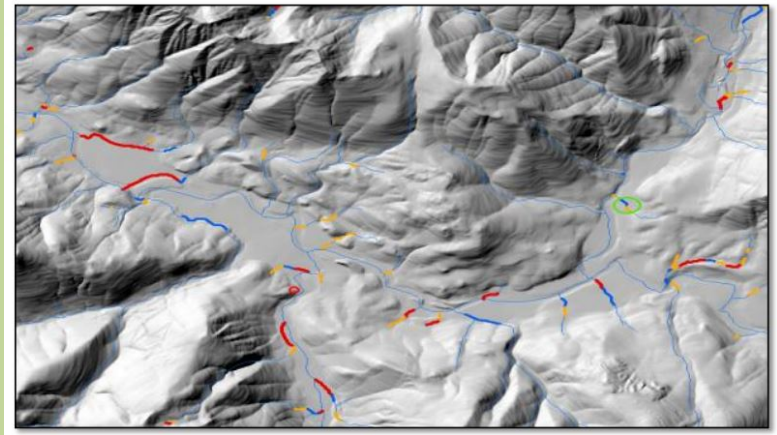


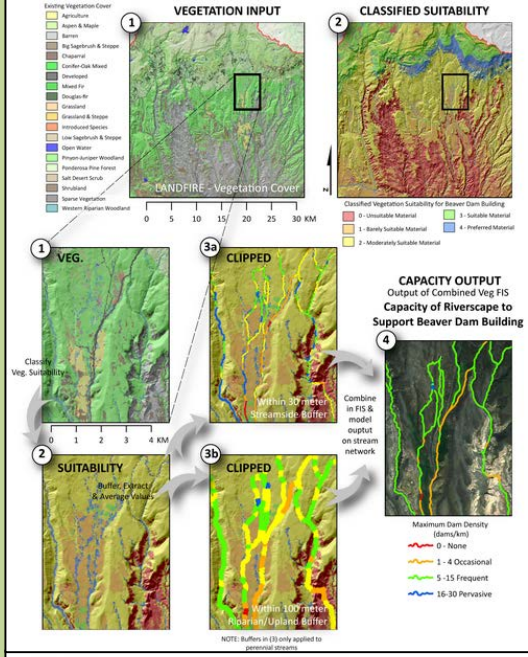
Figure 1 Example image of the Skykomish beaver HSI model. Red is highly suitable, blue is moderate, yellow is low, and small blue lines are not suitable

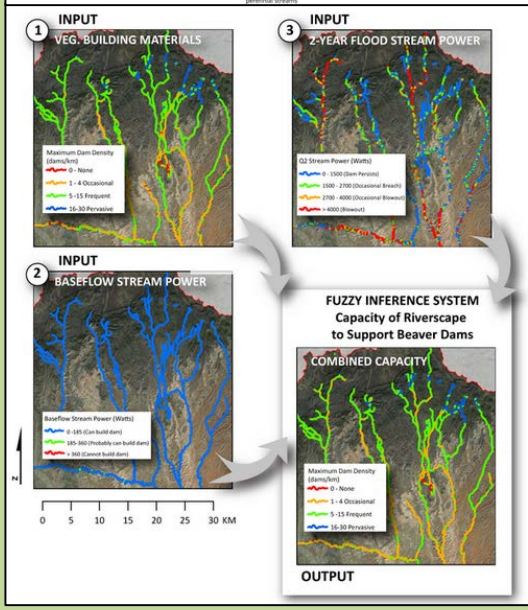
Tulalip Assessment Results on the Skykomish River Basin

A beaver release site in the lower Chewuch – September 2015

The same site one week later

Rapid ROI: One week before and after on the lower Chewuch River (From The Methow Beaver Project, 2015 Accomplishment Report)





BRAT-Beaver Restoration Assessment Tool inputs from Utah State University

California transplants beaver into El Dorado National Forest via parachute in 1950 (Source: CA Dept. of Fish and Wildlife).[16]

Contacts

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