Chehalis Basin Strategy Aquatic Species Restoration Plan (ASRP)

October 3, 2019

Chehalis Basin Board Meeting

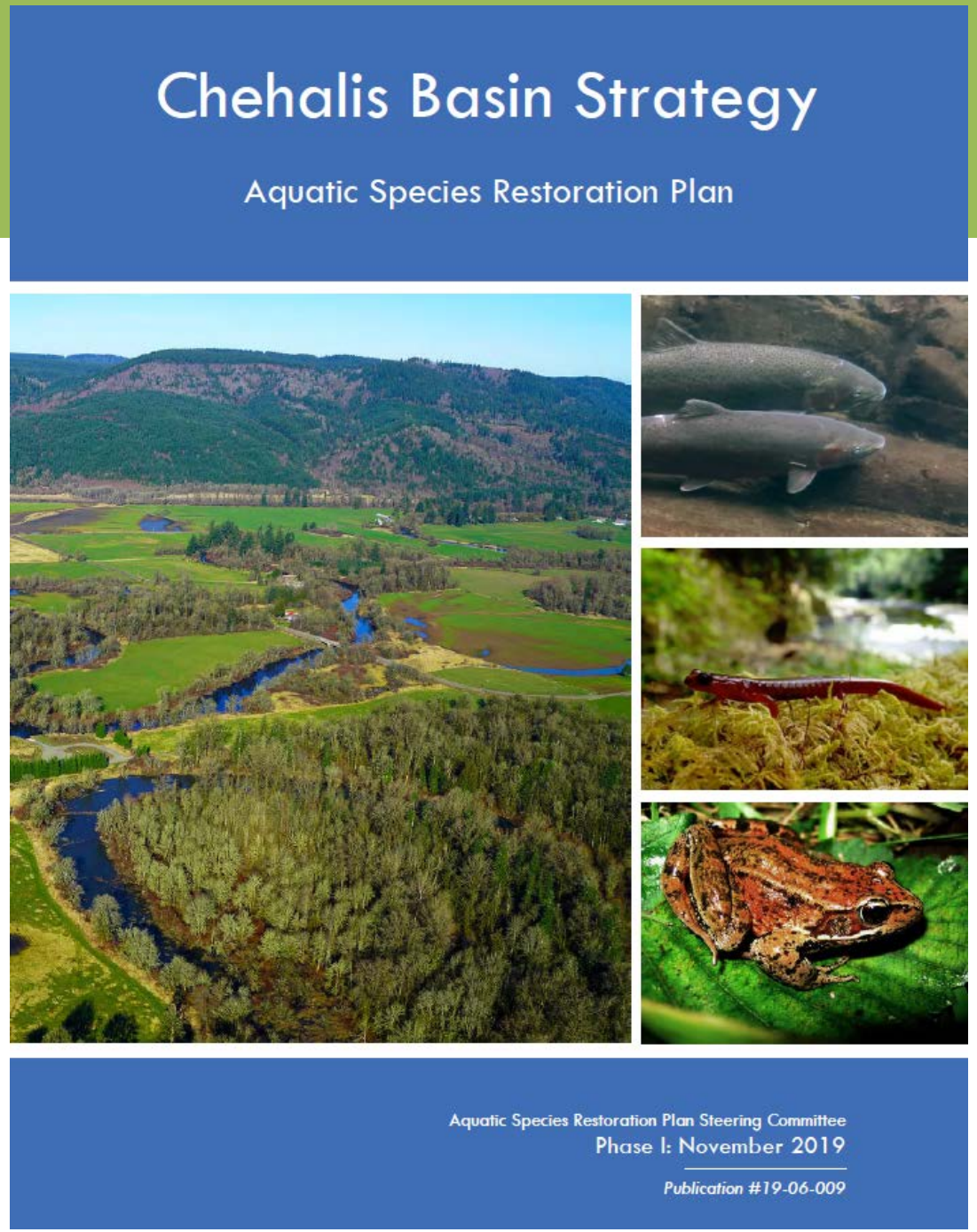
Phase 1 ASRP Timeline

- Pre publication outreach: Summer-Fall 2019
- Publication: Mid-November 2019
- Post publication outreach: Late fall 2019 -winter 2020

Phase 1 Outreach: Post Publication

- ASRP Symposium: Mid November
- Public release comment period
  - Ecology published document
  - 2 months in length (mid November 2019 – mid January 2020)
  - Online comment form

Phase 1 ASRP


Chehalis Basin Strategy
Aquatic Species Restoration Plan
Aquatic Species Restoration Plan Steering Committee
Phase I: November 2019
Publication #19-06-009

Phase 1 ASRP Preview

Executive Summary

1. Introduction
2. History, Current Conditions, and Future for the Chehalis Basin
3. Aquatic Species and their Habitats
4. Restoration Plan Approach
5. Ecological Regions
6. Expected Outcomes
7. Cost Estimate
8. Implementation Plan

Plan Approach

Habitat and Process Protection

Protect intact ecosystems, unique habitats, and strategic areas that support critical ecosystem functions and priority species.

Restoration

Restore ecosystem functions to support native aquatic and semi-aquatic species.

Community Planning

Effectively plan for current and future conditions in the Chehalis Basin.

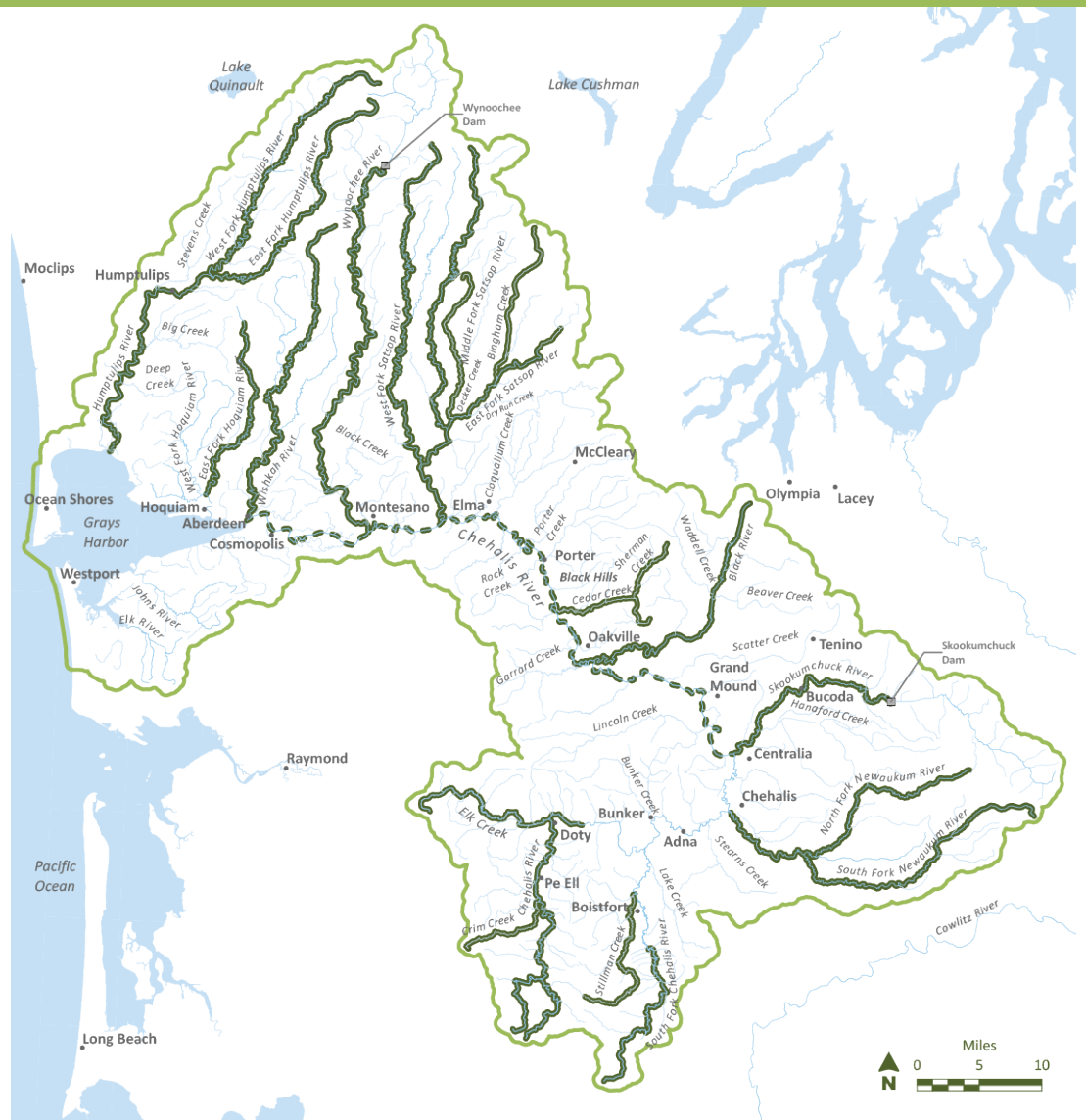
Community Involvement

Engage landowners and Chehalis Basin communities to ensure a successful plan and support implementation of actions.

Institutional Capacity

Build institutional capacity of existing organizations for restoration, protection, and planning processes to ensure the ASRP is a community-based restoration program.

Scenario 1, Protect and Enhance Core Habitats

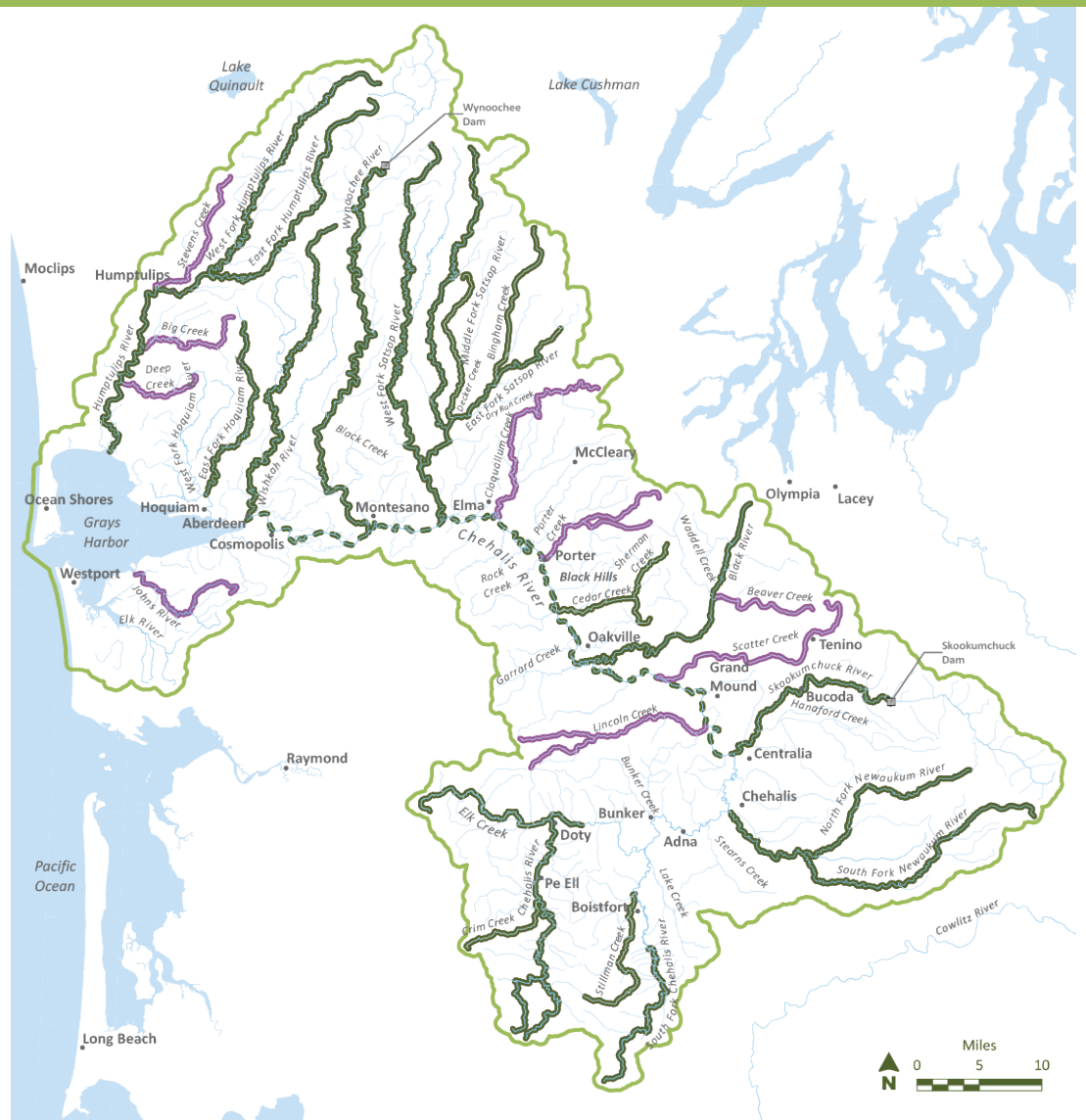


Protect and enhance core habitat areas

River Restoration = 222 miles
Riparian/Floodplain Restoration = 9,027 acres
Barriers = 115

Rivers and Streams
Study Area
Rivers Proposed for Protection/Restoration
Scenario 1: 220 miles
Rivers with Restoration at Nodes Only

Scenario 2, Protect Core Habitats and Restore Key Opportunities



Protect and enhance core habitats and expand to best restoration opportunities to benefit multiple species

River Restoration = 315 miles

Riparian/Floodplain Restoration = 10,245 acres

Barriers = 250

Rivers and Streams

Study Area

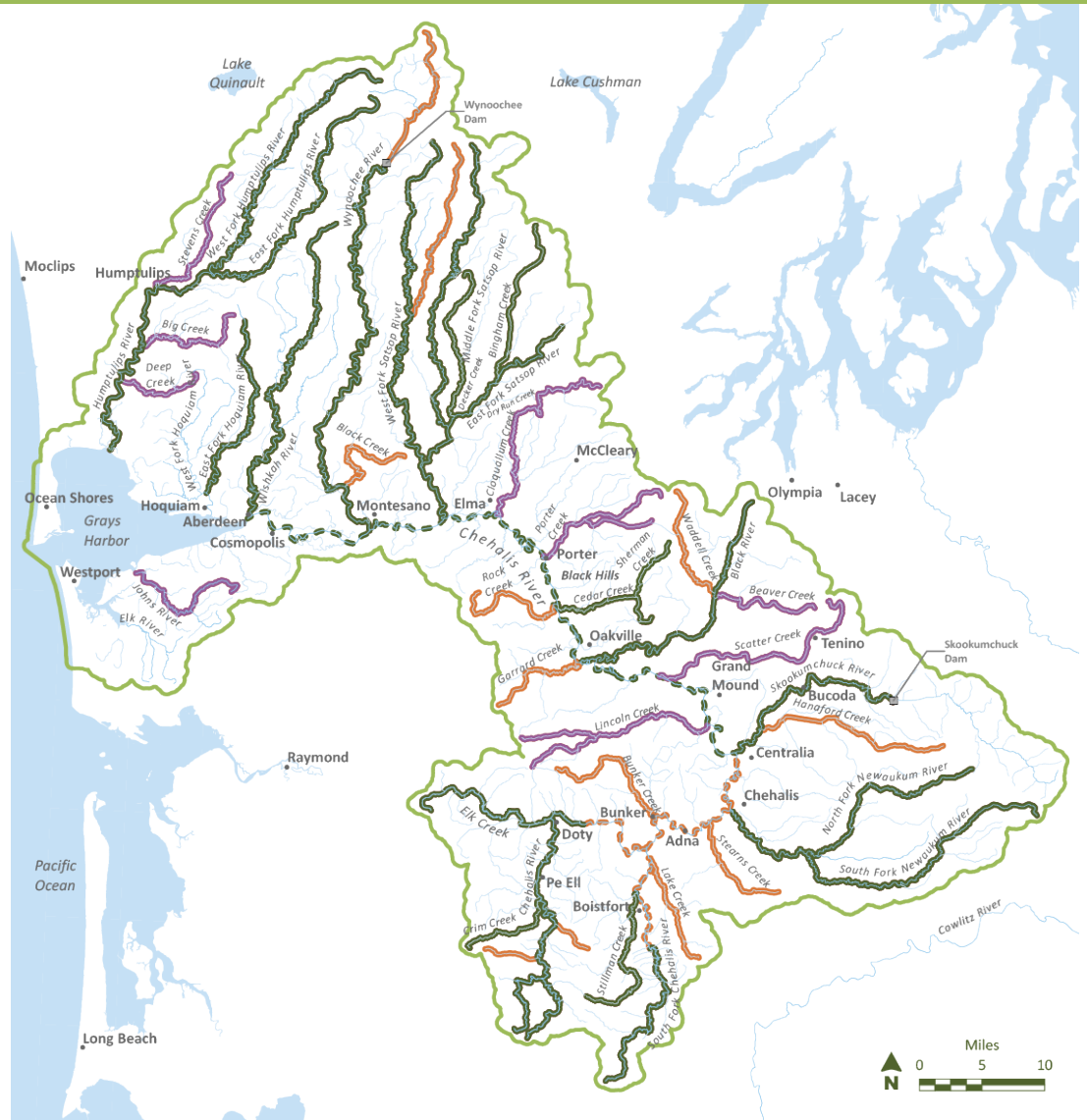
Rivers Proposed for Protection/Restoration

Scenario 1 Rivers also Included in Scenario 2: 260 miles

Additional Rivers Proposed for Scenario 2: 55 miles

Rivers with Restoration at Nodes Only

Scenario 3, Protect Core Habitats and Expand Distribution



Protect and enhance core habitats and increase spatial and life history diversity

River Restoration = 450 miles
Riparian/Floodplain Restoration = 15,323 acres
Barriers = 350

Rivers and Streams
Study Area

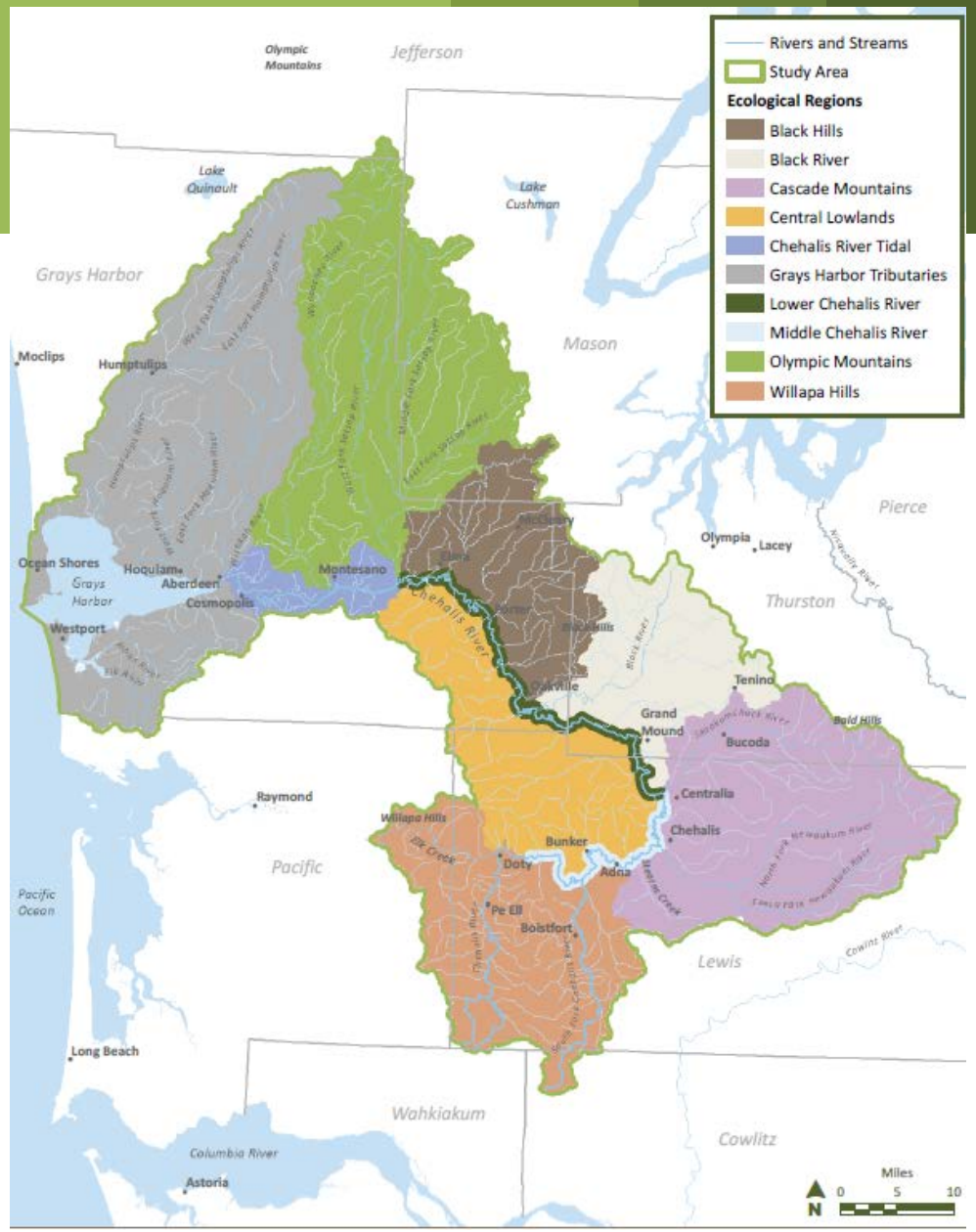
Rivers Proposed for Protection/Restoration

Scenario 1 Rivers also Included in Scenario 3a: 293 miles
Scenario 2 Rivers also Included in Scenario 3a: 66 miles
Additional Rivers Proposed for Scenario 3a: 79 miles
Rivers with Restoration at Nodes Only

Ecological Regions

10 Regions:

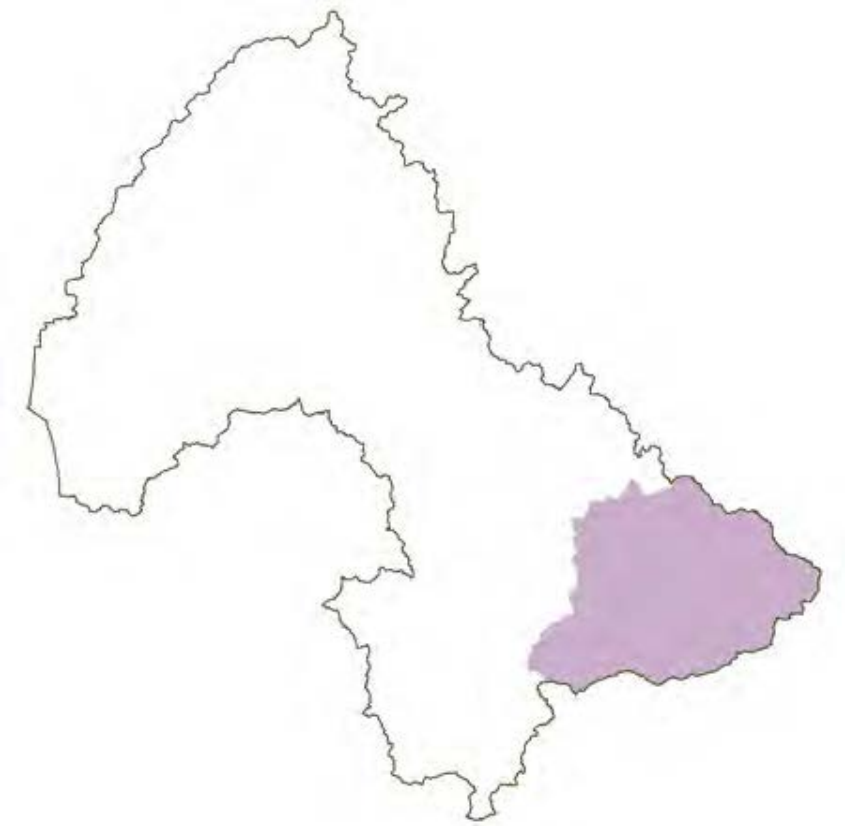
- o Overview
- o Historical conditions and changes
- o Current conditions
- o Limiting factors
- o Strategies and actions in the region



Ecological Regions: Cascade Mountains

Overview:

- Encompasses 424 miles^2 (16% of overall basin)
- Includes the Newaukum and Skookumchuck rivers and their tributaries, Stearns and Salzer creeks, and other tributaries to the east bank of the Chehalis River near Chehalis and Centralia
- Newaukum and Skookumchuck rivers support the majority of the spring Chinook salmon population in the Chehalis Basin



Ecological Regions: Cascade Mountains

Historical Conditions and Changes

- Dominated by old-growth Western hemlock forest, including other species such as Douglas fir and Western red cedar
- Numerous prairies and wetlands were present in the valleys
- Extensive timber harvest and agricultural uses in some areas, notably in the Newaukum and Skookumchuck valleys, and urban development on the lower Newaukum and Skookumchuck rivers associated with Chehalis and Centralia and the major transportation corridors.
- Similar to other regions of the basin splash dams were used which cleared in-stream habitat complexity

Stream conditions lacking wood and mature riparian areas are common throughout the Cascade Mountain Ecological Region.

Ecological Regions: Cascade Mountains

Limiting Factors:

- High water temperatures
- Low habitat diversity (lack of side channels, large wood, floodplain habitats, and beaver ponds)
- Key habitat (quantity of instream habitats)
- Poor riparian conditions

Infrastructure in the floodplain has disrupted natural processes, as illustrated by this riprap embankment protecting a bridge crossing.

Ecological Regions: Cascade Mountains

Strategies and Actions:

- Strategically select wet prairie habitats such as Stearns and Hanaford Creeks to conduct large contiguous restoration projects
- Protect headwater lakes in Skookumchuck sub-basin
- Install functional wood structures to trap sediment and smaller wood, restore riparian buffers
  - Start in the upper reaches of the Skookumchuck and Newuakum tributaries and move downstream
- Remove fish passage barriers; focusing in Hanaford Creek and the South Fork Newaukum River tributaries

Stearns Creek is a priority for lowland marsh and prairie restoration. Like other creeks in the Cascade Mountain Ecological Region, much of Stearns Creek is restricted by fish passage barriers, channelization, poor riparian conditions, loss of floodplain habitats, and high water temperatures.

Ecological Regions: Cascade Mountains

Strategies and Actions:

- Increase community involvement in protecting spring chinook summer holding areas to reduce poaching

- Discuss with respective counties whether planning methods could effectively protect:
  - Floodplain connectivity
  - Water temperatures

The upper South Fork Newaukum River, including the Pigeon Springs area, is a key cold-water refuge for spring Chinook salmon and other indicator species that should be protected.

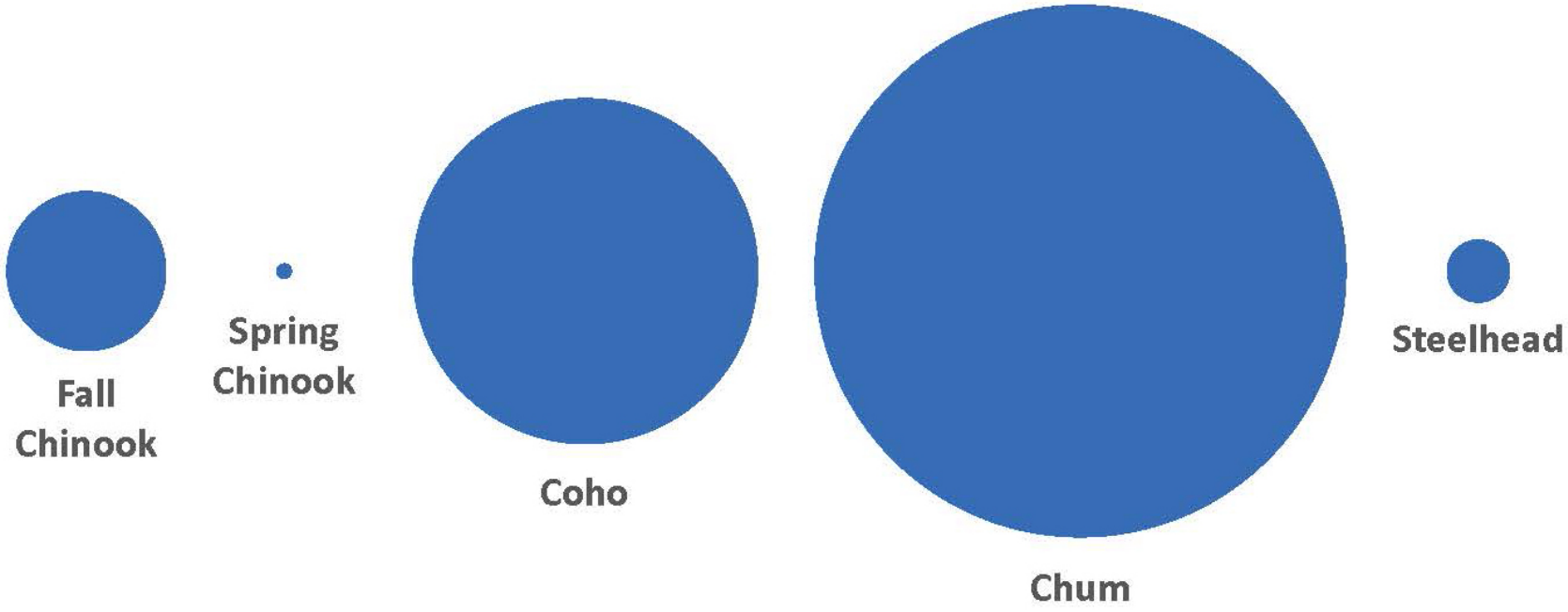
Expected Outcomes

- Model results for habitat potential of salmon species in the freshwater environment

- Time series:
  - Current conditions
  - 2040
  - 2080
- No action, and scenario results

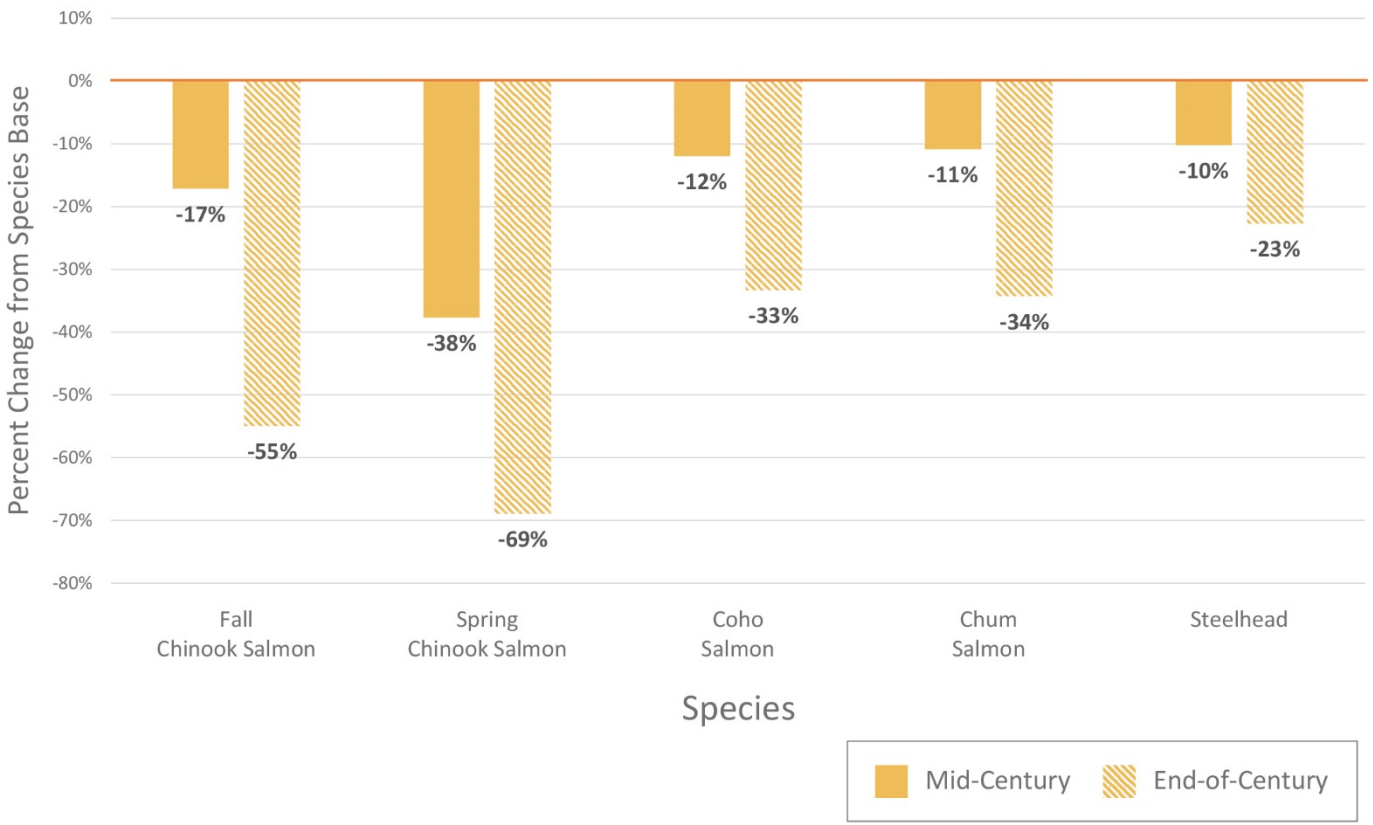
Expected Outcomes

Relative Habitat Potential: Current Conditions



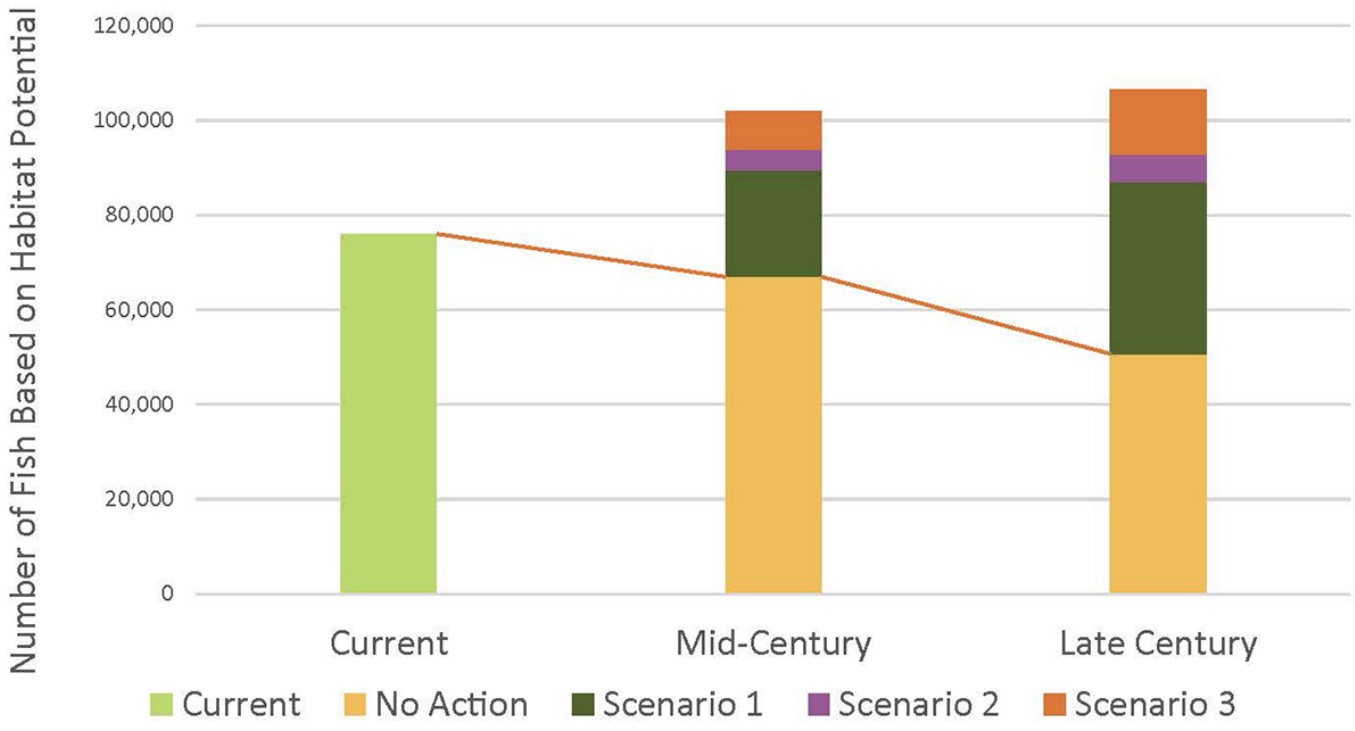
Expected Outcomes

No Action Scenario:



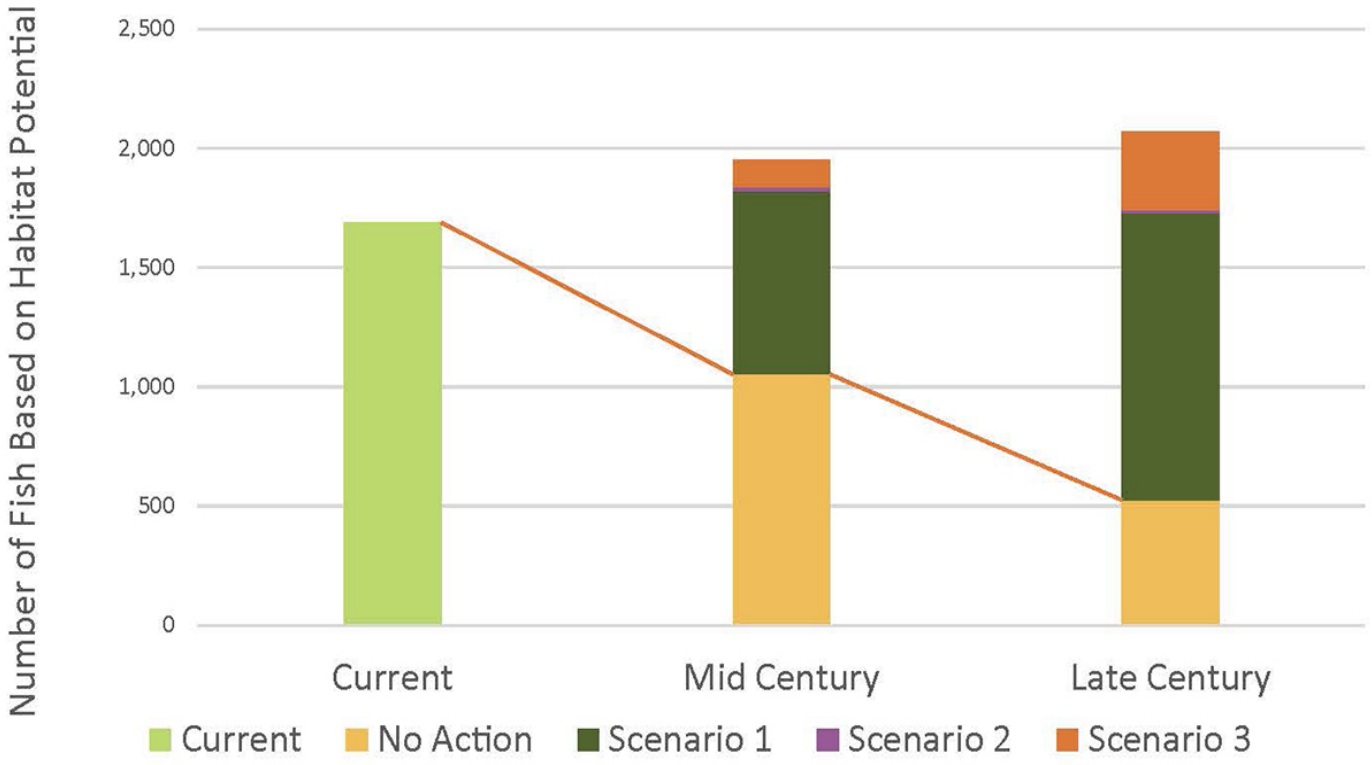
Expected Outcomes

ASRP Restoration Scenario Results: Coho



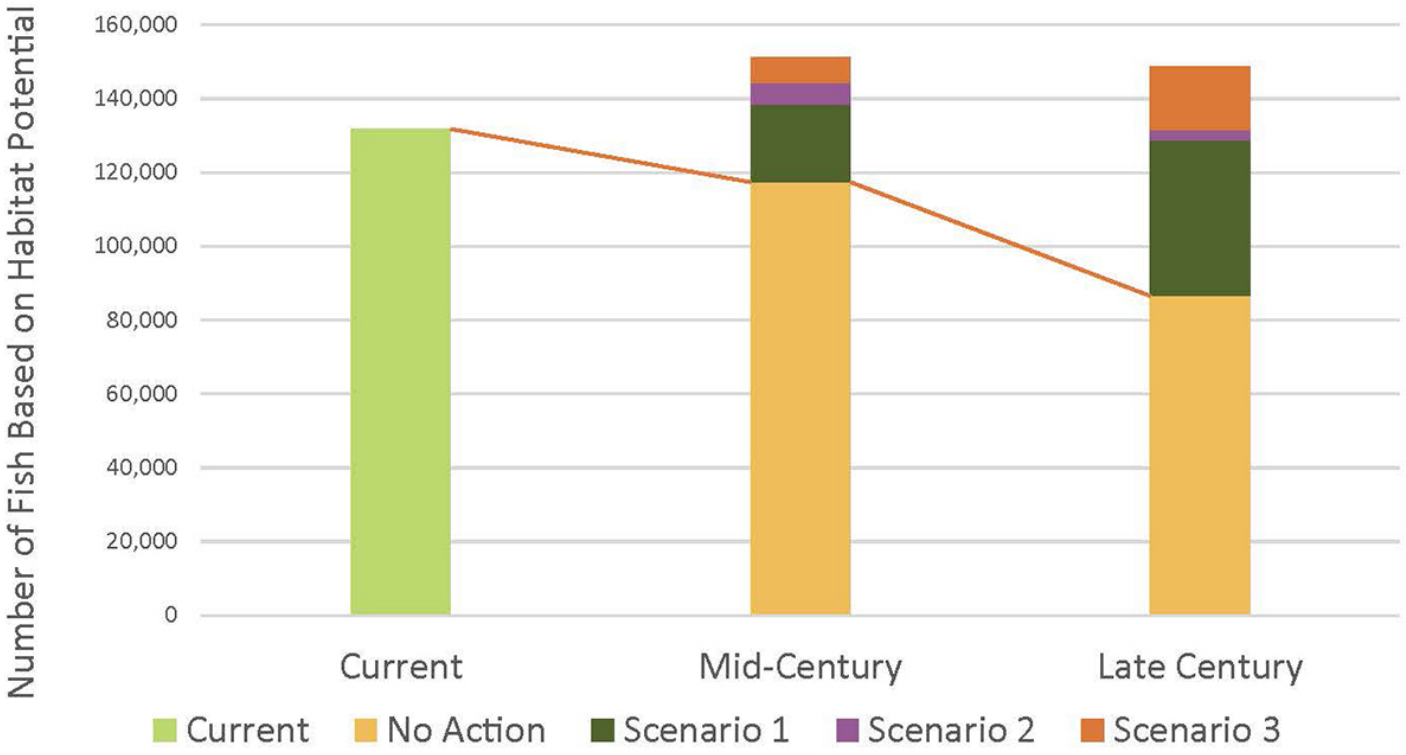
Expected Outcomes

ASRP Restoration Scenario Results: Spring Chinook



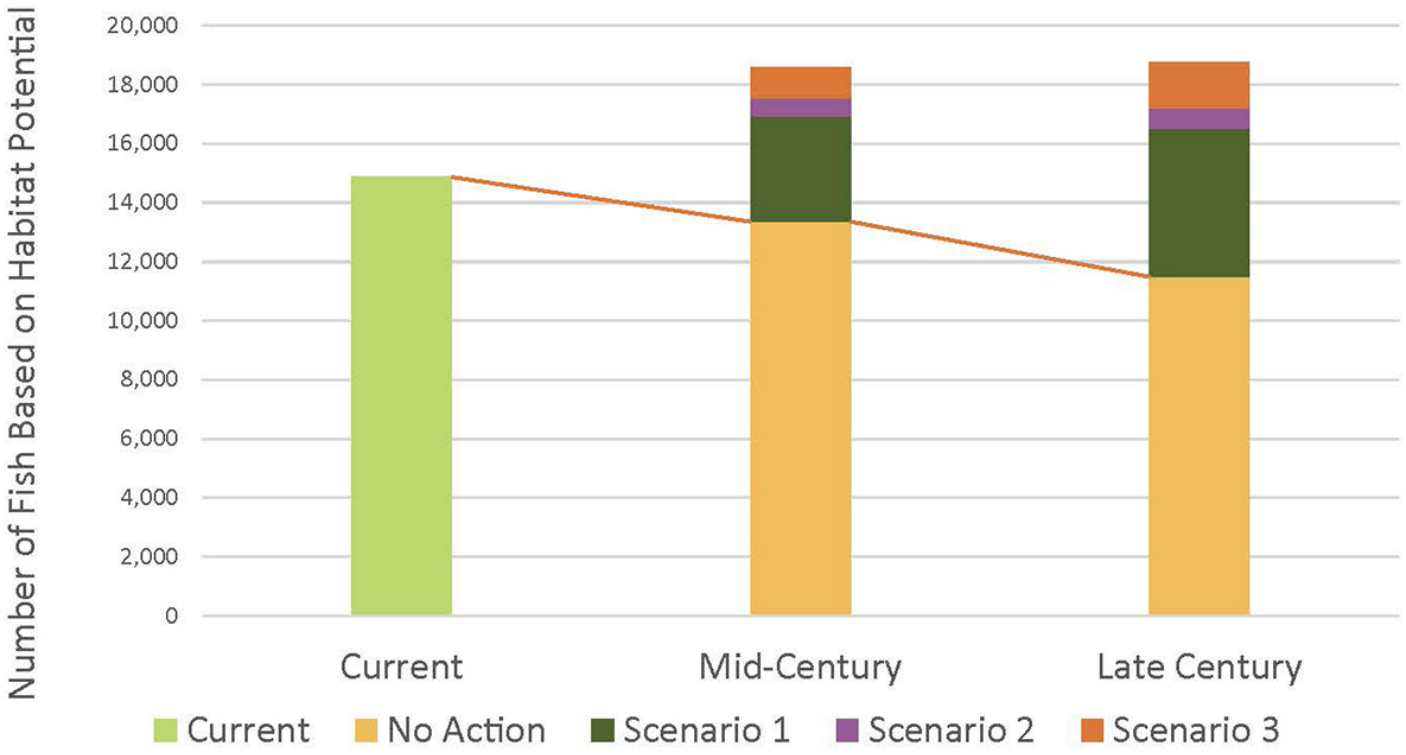
Expected Outcomes

ASRP Restoration Scenario Results: Chum



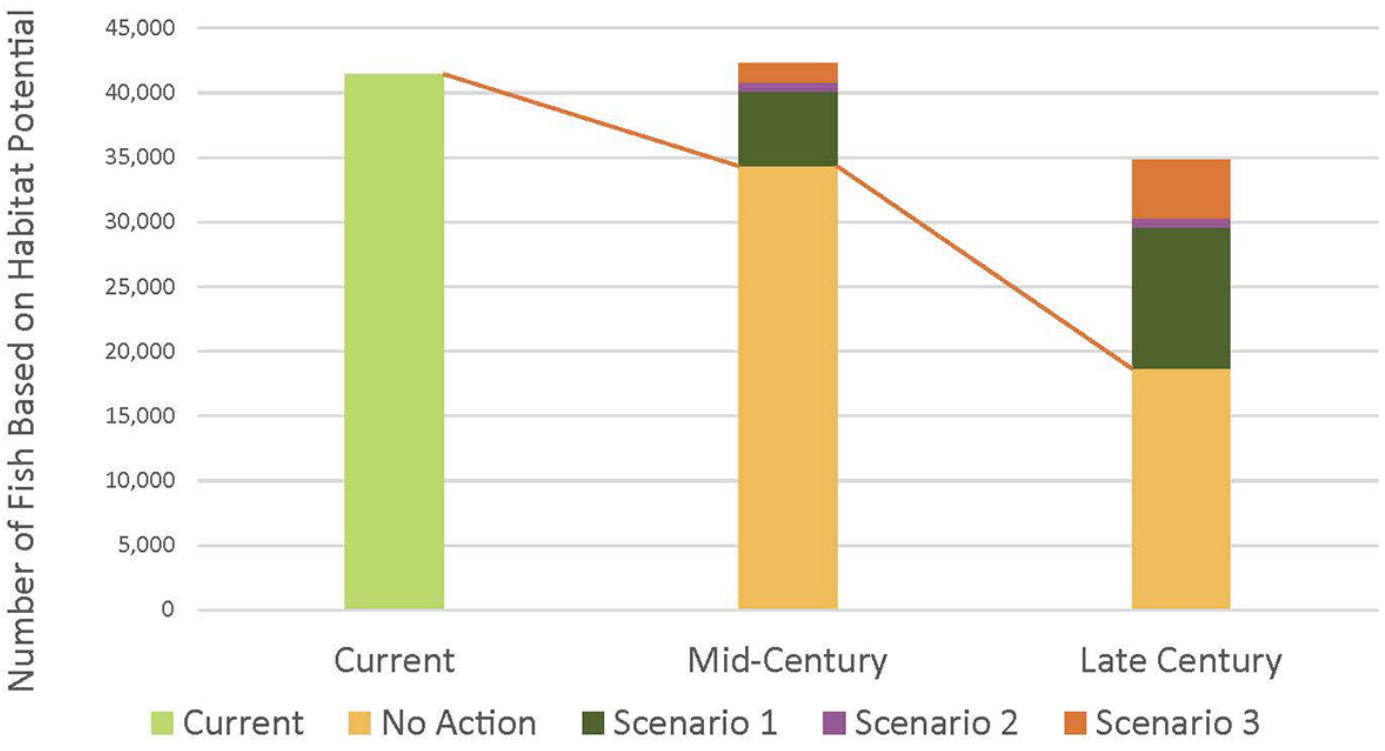
Expected Outcomes

ASRP Restoration Scenario Results: Steelhead



Expected Outcomes

ASRP Restoration Scenario Results: Fall Chinook



Expected Outcomes

ASRP Restoration Scenario Results: Other Native Species

Increases by species in:

- Spatial distribution
- Habitat capacity
- Habitat types

Cost Estimates

- Developed for 3 restoration scenarios
  - Use “today’s dollar”
  - Conservative ranges

- No cost estimate for “No Action” scenario
  - Assumed inherent costs from increased risk of extinction, reductions in fisheries revenue

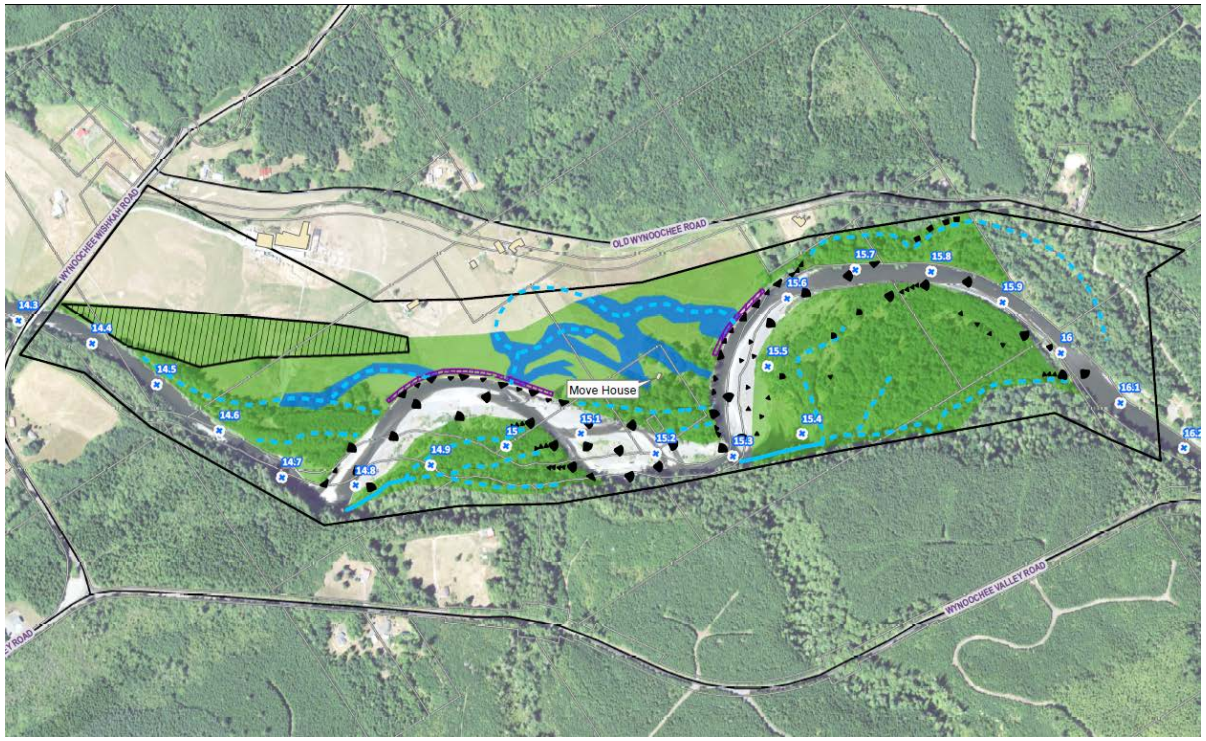
Cost Estimates

Restoration Scenario	Miles of Channel Restored	Riparian and Floodplain Acres Restored	Cost Range		
			Low	Average	High
Scenario 1	222	9,027	$289M	$439M	$604M
Scenario 2	316	10,245	$368M	$547M	$745M
Scenario 3	450	15,323	$547M	$812M	$1.104B

Implementation

1. Reach Scale
   A. Several miles in length
   B. Multiple treatments to restore ecosystem processes

Example: 3 miles long, several landowners, wood placement, plantings, side channel re-creation, acquisitions, etc.



2. Non-Reach Scale
   A. Smaller scale
   B. At least one restoration treatment applied

Example: fish passage barrier corrections

Implementation 19-21

November 2019: ASRP Projects Grant Round Request for Proposals

Annual “non-reach scale” projects grant round

- $2M in implementation funds for 19-21
- Construction possible in 2020
- High priorities:
  - Fish passage barrier corrections
  - Plantings in key areas
  - Landowner relationship development

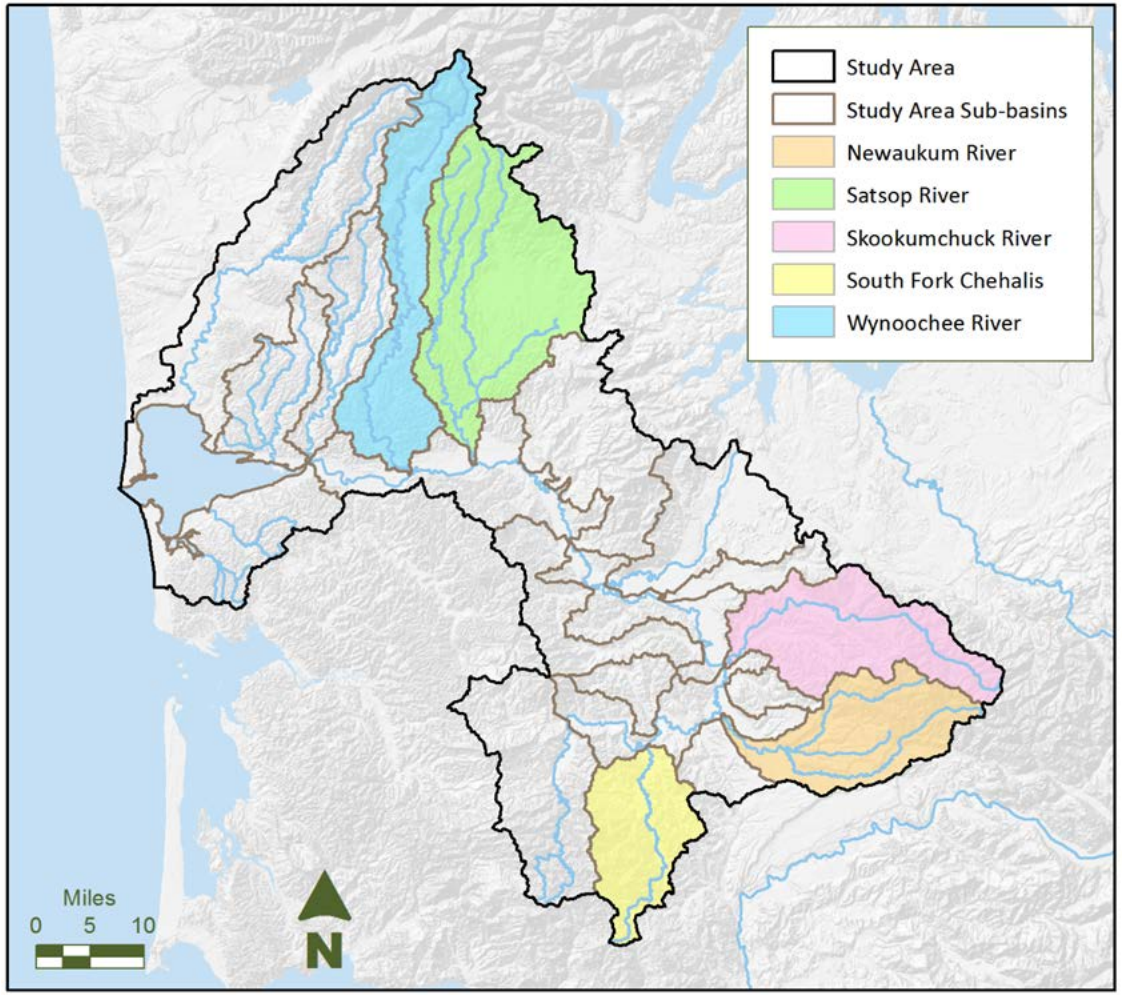
Implementation 19-21

Currently underway/completed:

- 5 early action reach projects
- Native aquatic species restoration (Oregon spotted frog, etc.)
- 2017-19 biennium barrier projects

Looking ahead:

- Priority sub-basin focus
- Additional reach scale projects:
  - Wood loading in managed forests
  - Landowner partnerships in key ecological areas



Early Action Reaches Update

- Permitting Design Phase
  - Permit preparation
  - Construction planning
  - Materials procurement planning
- Landowner Meetings
  - Acquisitions and easements underway
    - Coordination with local Land Trusts
- Pre-Project Monitoring

Wynoochee aerial drone footage, WDFW

Early Action Reaches Update

1st ASRP Acquisition Complete

Questions

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