An aerial photograph of a rural landscape. The foreground and middle ground are dominated by vibrant green agricultural fields. A winding river or stream flows through the scene, particularly on the right side. In the center, there is a small farmstead with several buildings and a road. The background shows a mix of green fields and dense forested areas under a clear sky. The image is framed by a green gradient at the top and a blue gradient at the bottom.

# Chehalis Basin Aquatic Species Restoration Plan (ASRP)

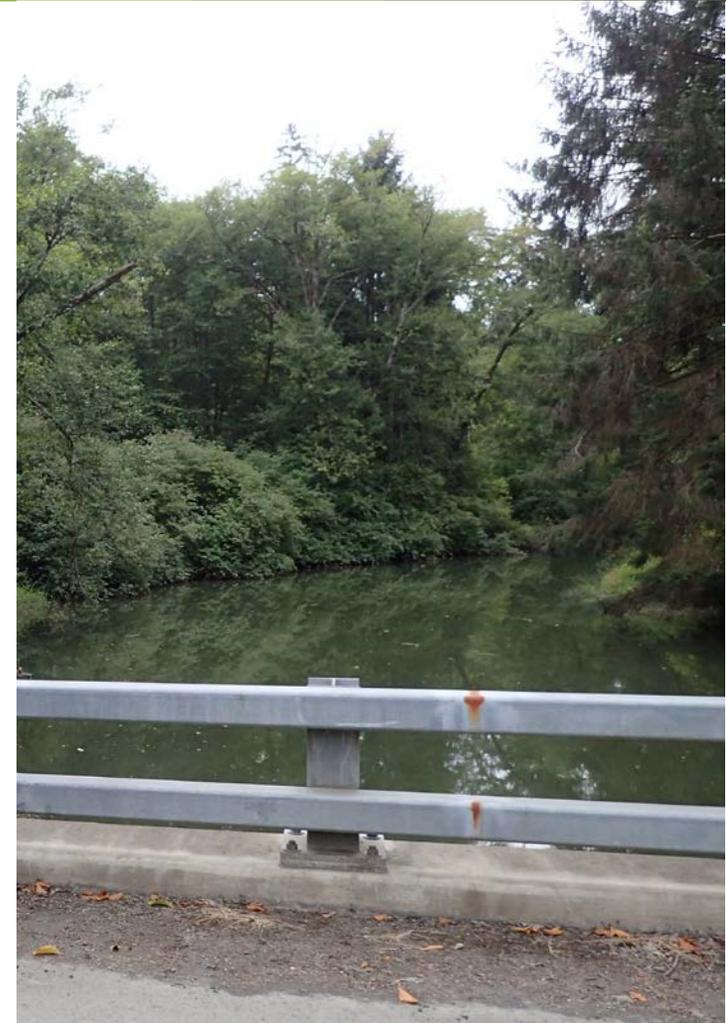
November 1, 2018

Chehalis Basin Board Meeting

# Current On the Ground Actions

## **Lead Entity Coordination:**

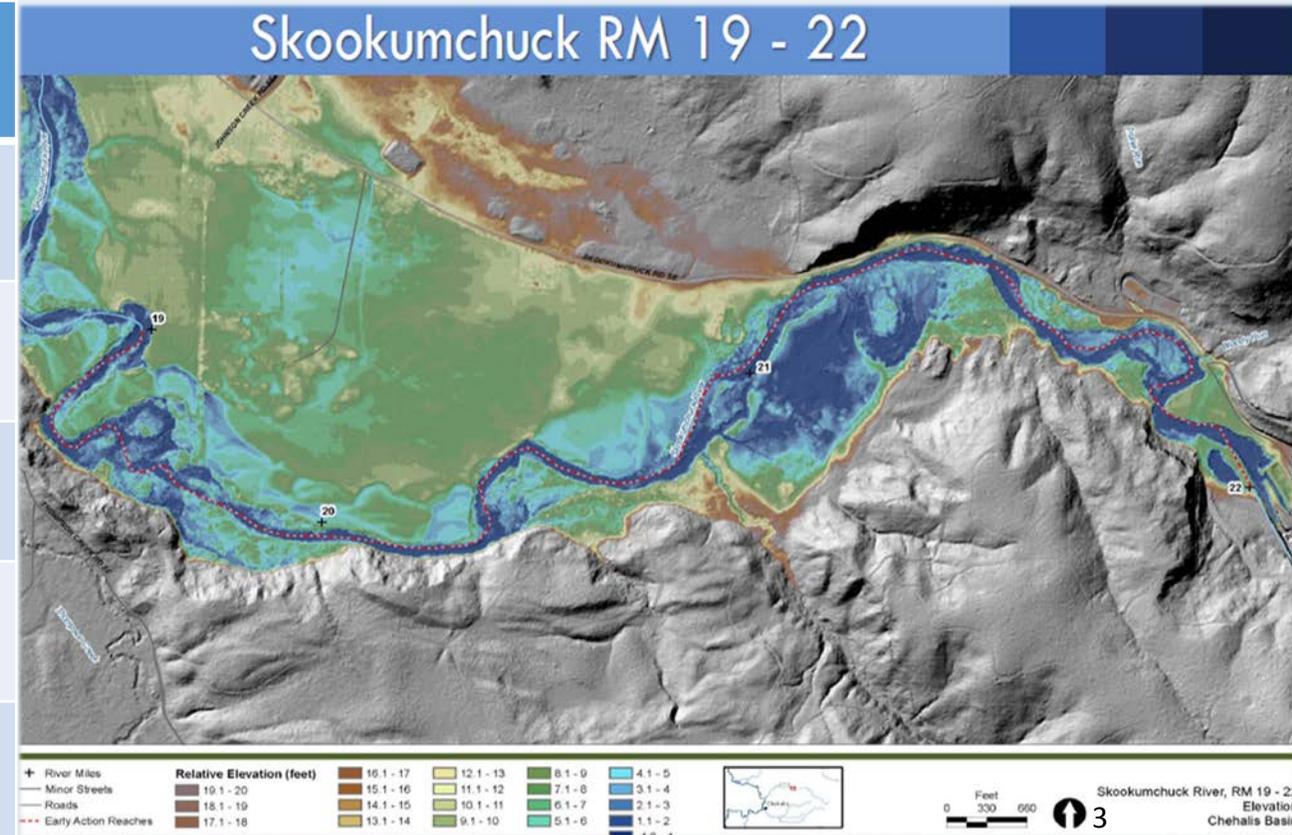
- 54 Fish Passage Barriers Addressed
- 87 Miles of Fish Habitat Opened
  - designs completed to open another 17 miles
- 30 Miles of habitat surveyed
- 6 Miles of Riparian Knotweed removed
  - 4 miles replanted with native species
- 1 Channel Reconnected
  - 21.5 Acres of off channel reconnection design completed



# Current On the Ground Actions

## Early Action Reaches

Sub-basin	Recommended reach to advance to design
Wynoochee	RM 13.5-15
South Fork	Stillman Creek, RM 0-2.5
Satsop	RM 8-10.5
Skookumchuck	RM 19-22
Newaukum	RM 10.9-13



# Plan Approach

## **Four Major Strategies**

- Restoration
- Protection
- Institutional Capacity
- Community Planning & Involvement



# Ecological Diversity Regions

**Basin divided into 10 unique ecological regions**

Black Hills

Black River

Cascade Mountains

Central Lowlands

Chehalis River Tidal

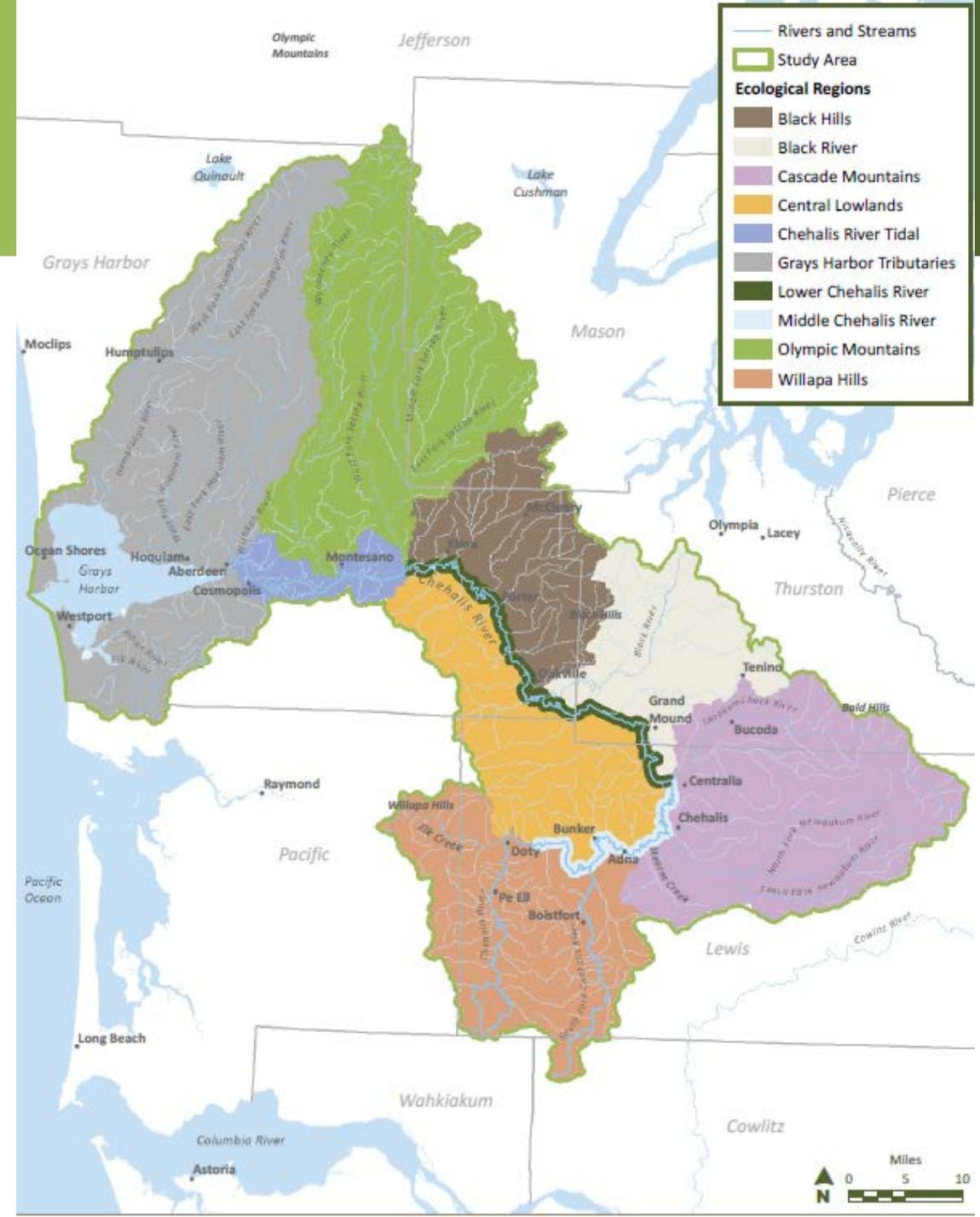
Grays Harbor Tributaries

Lower Chehalis River

Middle Chehalis River

Olympic Mountains

Willapa Hills



# Restoration and Protection Strategies: Prioritization Step

## **ASRP will prioritize proposed actions**

- Both restoration & protection actions
- Occur basin wide
- Guide implementation
- Focus actions to ensure greatest impact



Top right: Large wood on the Humptulips

Lower right: Upper East Fork Satsop wetland complex

# ASRP Science Symposium

## Day 1: 15 WDFW Research Presentations

### Topics such as:

#### Spring & Fall Chinook Salmon:

- Population Genetic Analysis
- Juvenile Life History & Maternal Run Timing
- Species Status in Basin

#### Chum Salmon:

- Grays Harbor Abundance & Distribution

#### Habitat:

- Summer patterns of fish, habitat & Temperature
- Changes in floodplain habitat through time

#### Amphibians:

- Riparian Associated Species
- Instream Species Distribution
- Off channel Habitat Needs



STATE OF WASHINGTON May 2018

Summer Riverscape Patterns of Fish, Habitat, and Temperature  
in Sub Basins of the Chehalis River, 2013-2016

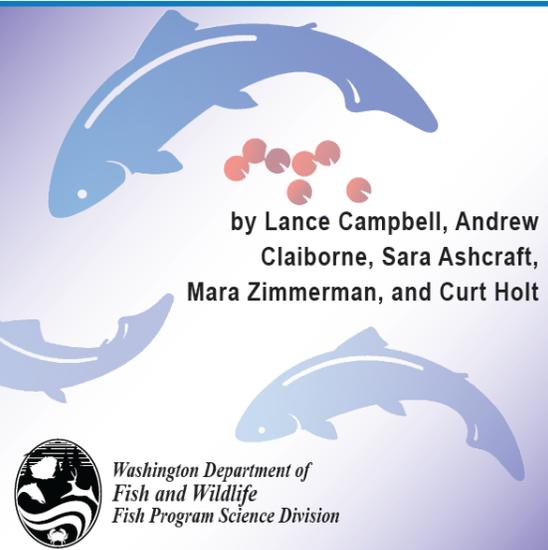


John Winkowski, Eric Walther, and Mara Zimmerman  
Fish Science Division, Washington Department of Fish and Wildlife, Olympia, WA

Washington  
Department of  
FISH and  
WILDLIFE

FPT 18-02

Investigating Juvenile Life History and Maternal  
Run Timing of Chehalis River Spring and Fall  
Chinook Salmon Using Otolith Chemistry



by Lance Campbell, Andrew  
Claiborne, Sara Ashcraft,  
Mara Zimmerman, and Curt Holt

Washington Department of  
Fish and Wildlife  
Fish Program Science Division

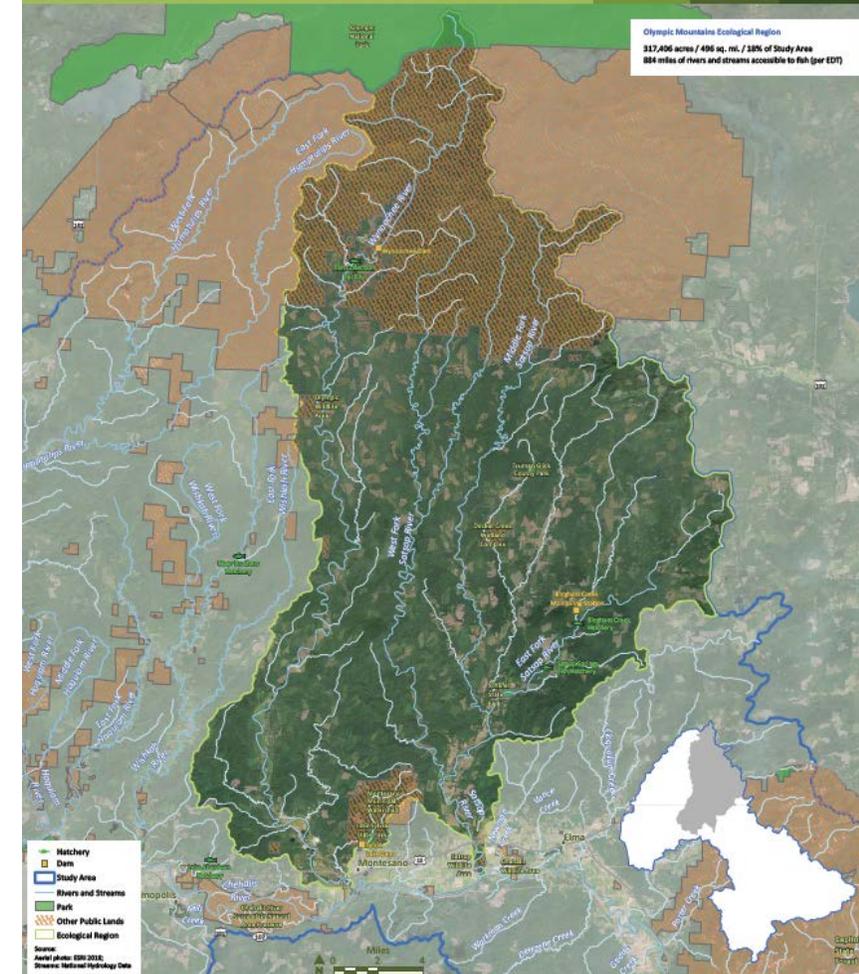
FPT 17-15

# ASRP Science Symposium

## Day 2: ASRP Development & Open House Session

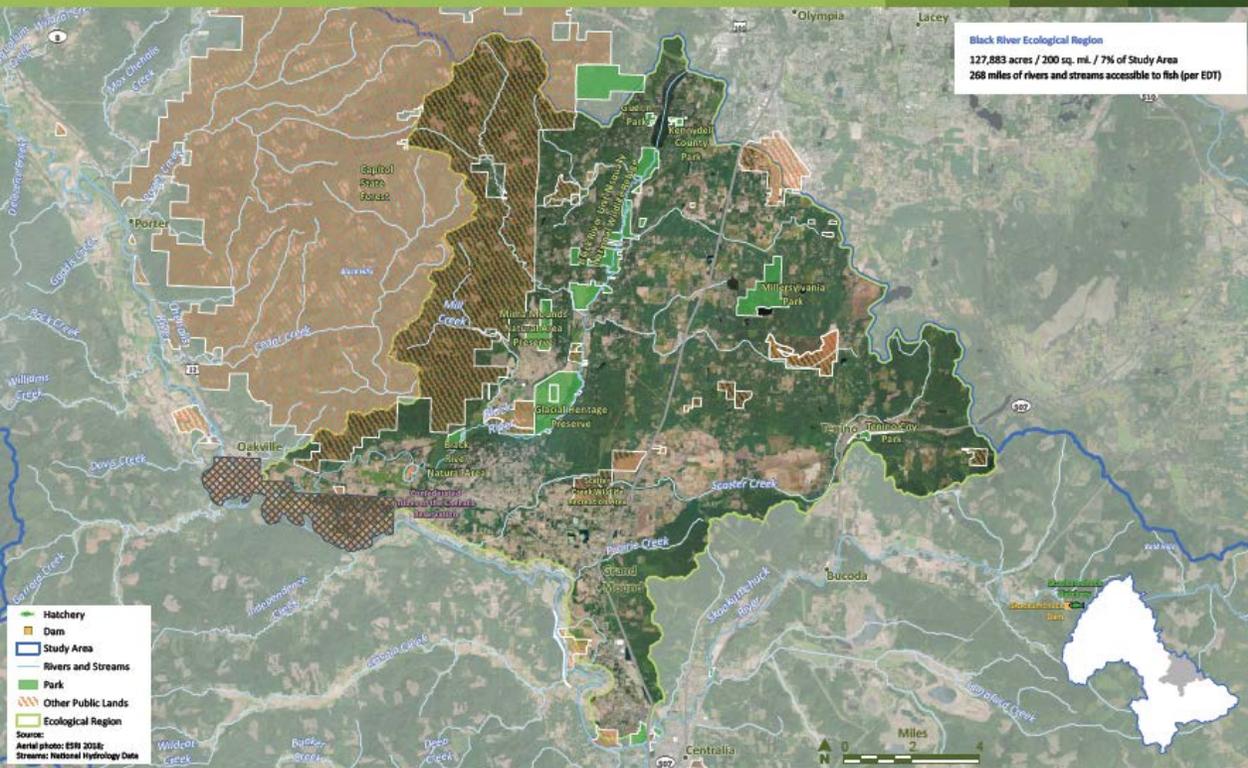
- ASRP Overview
- ASRP Early Action Reach Projects
- Science Review Team Findings for Ecological Diversity Regions

### Olympic Mountains Ecological Region Map



# Ecological Diversity Region Boards

## Black River Ecological Region Map



## Black River Ecological Region Overview

### What are important/unique features and functions within this Ecological Region?

- Extensive low-gradient wetland complexes found in the Black River Ecological Region are currently unique in the Chehalis Basin (some may have historically existed in the Skookumchuck River area). Springs and groundwater inputs may be occurring.
- State wildlife lands and extensive marsh systems limit land development in much of this Ecological Region, which offers important protections to aquatic species.
- The presence of Oregon spotted frog is unique to this Ecological Region. Olympic mudminnow is also widespread and has frequent co-occurrence with Oregon spotted frog.
- West Rocky Prairie is a unique area with several types of headwater prairie habitats that support multiple threatened species.
- Stream temperature is not well understood but may be particularly important to summer habitat for juvenile coho salmon and summer holding habitat for adult spring chinook salmon (note adult spring chinook salmon have been reported in the Black River by landowners but not recently confirmed). Temperatures in the lower mainstem are quite warm during the summer, but there has been minimal spatial coverage to document temperatures or identify coho salmon summer rearing areas.

### What is working? What is broken?

- The Ecological Region is lacking wood nearly everywhere.
- Substantial channel length lacks stable gravel.
- There are invasive exotic plant species including reed canarygrass.
- The extensive, relatively intact marsh habitat and lakes are high protection priorities.
- The upper Black River is vulnerable to development impacts from the greater Olympia area.
- The Black River has been channelized and widened, and possible impacts of those modifications have not been evaluated.
- Scatter Creek instream flows may be impacted by groundwater pumping and the historical diversion of one of its headwater tributaries outside of the Basin.

### What are your thoughts about some of the protection and restoration strategies and actions we feel are important for this Ecological Region?

- Ensure continued protection and restoration/management of Oregon spotted frog habitat.
- Identify and protect areas with cool-water inputs.
- Reduce or prevent surface or groundwater withdrawals that could decrease instream flows, including reconnecting diverted tributaries, particularly in systems like Scatter Creek.
- Identify effects of channelization in the Black River and other systems and restore if needed and possible, with the objective of restoring anabranching channel patterns where appropriate. Add instream structure to increase the number of pools and promote anabranching/island formation.
- Protect functioning wet prairie, floodplain, and marsh habitats, especially in the Allen Creek area.



The low-gradient and meandering Black River, along with Scatter and Prairie creeks, formerly supported significant runs of oum and coho salmon but these populations are reduced now.



A mosaic of riparian areas and palustrine forested, scrub-shrub, and emergent wetlands in the ecological region represent one of the largest remaining relatively undisturbed freshwater wetland systems in the Puget Sound region. The extensive associated wetland system should be further protected and enhanced.



The Black River Ecological Region is the only known occurrence of Oregon spotted frog in the Chehalis Basin, and one of only six known locations in Washington. West Rocky Prairie, a known Oregon spotted frog-occupied site, is an example of glacial pond habitats that should be targeted for protection and restoration.



Scatter Creek was an important historical habitat for salmon and other indicator species. This area is currently threatened by impaired riparian function, loss of floodplain habitats, and low flows. Scatter Creek could be enhanced by protection of flows and restoration of beaver habitat and wood.

# Questions

