July 2, 2024

MEMORANDUM

TO: **Council Members**

FROM: **Mark Fritsch**

SUBJECT: **Update on Project #2009-012-00, Willamette Bi-Op Habitat Restoration**

BACKGROUND:

Presenter: Eric Williams, Grant Program Manager; Denise Hoffert, Partnerships Coordinator Oregon Watershed Enhancement Board (OWEB)

Summary: Denise will provide an update and overview of the accomplishments of this project to implement critical mainstem Willamette River habitat protection and restoration activities associated with the Willamette Flood Control Program Biological Opinion.

Relevance: Project #2009-012-00, Willamette Bi-Op Habitat Restoration is one of the seven umbrella[1] projects supported by the Fish and Wildlife Program. The project uses a comprehensive watershed management approach, using structured and science-based decision tools to enhance implementation of on the ground activities, resolve conflicts, and formulate priorities for action.

This presentation was requested as part of the Council recommendation associated with the Anadromous Fish Habitat and Hatchery Review in April 2022. The periodic presentation is intended to provide an update on

[1] see page 2 for information regarding the Program's umbrella projects.

the project's accomplishments and results. No decision is needed at the meeting.

Workplan: Fish and Wildlife Division work plan 2024; Program planning & coordination.

Background: The Willamette River flows generally northward through the Willamette Valley, which lies between the Cascade Mountain Range to the east and the Coast Mountain Range to the west. The Willamette River is fed by numerous rivers and streams originating in the Cascade and Coast Mountain Ranges. The Willamette River is the 13th largest river in the contiguous United States in terms of streamflow. This large river system historically flooded on an annual basis, covering much of the valley floor.

` Over the past 200 years many structural changes to the Willamette River have occurred. Since the late 1800s, the demands on development throughout the Willamette Valley have resulted in over half of the river's 180-mile length being armored and the historic extent of floodplain forests has declined by more than 70%.

The Willamette Bi-Op Habitat Restoration Project seeks to increase and enhance habitats for ESA-listed spring Chinook salmon and steelhead in Oregon's Willamette River and below the major federal dams in the following tributaries: McKenzie River, North and South Santiam Rivers, and Middle Fork Willamette River. The Project was developed to meet the requirements of Reasonable and Prudent Actions (RPA 7.1.2 and 7.1.3) of the Willamette Project Biological Opinion. The Program is administered by OWEB, which is a state grant-making agency, in partnership with BPA's Habitat Technical Team.

Umbrella Projects

Umbrella projects are a smaller subset of the projects (#7) currently being implemented through the Program. These umbrella projects are unique, because of the coordination role they play in a particular sub-region, and also because of their approach to their implementation in offering a solicitation and review process that can fund local entities to implement projects. The funding, review and selection process is much like a mini-grant program for the area. The science review that would normally occur through an Independent Science Review Panel (ISRP) review occurs at the local level with ISRP-reviewed criteria and local technical teams. While the processes differ slightly in each area the umbrella projects under this recommendation are largely defined by their approach to: 1) serve as a coordinating entity among sponsors in a particular sub-region to identify, review, and select projects; 2) use a formal project solicitation process; and 3) allocate and administer Bonneville funds to other entities for implementation.

More Info:

- Oregon Watershed Enhancement Board
- Willamette Mainstem Anchor Habitat Working Group Progress Report
- Project #2009-012-00 Summary, BPA project website

Willamette Bi-Op Habitat Restoration Project (Umbrella Project) (*2009-012-00*)

NWPCC

July 10, 2024

Denise Hoffert, Partnerships Coordinator, OWEB (denise.hoffert@oweb.oregon.gov)

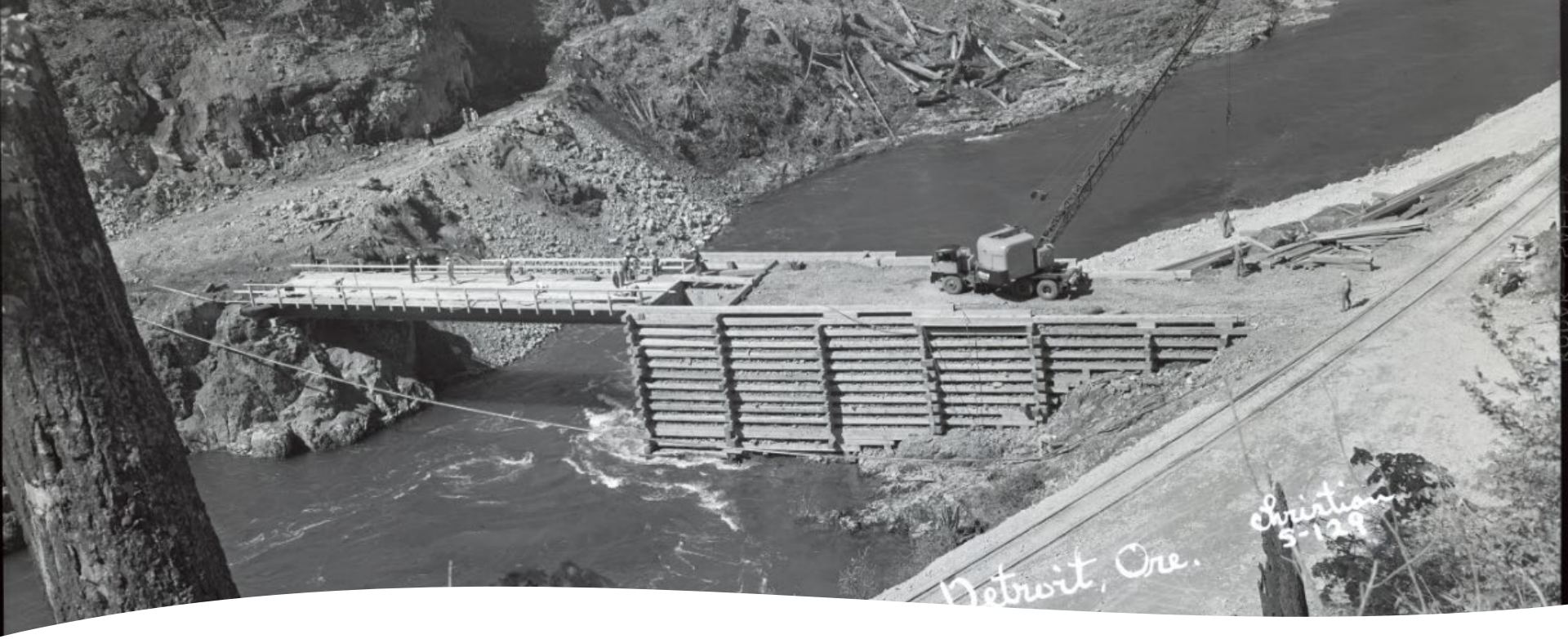
Eric Williams, Grant Program Manager, OWEB (eric.williams@oweb.oregon.gov)

View of Willamette River near Oregon City, 1907, William L. Finley photographer

Willamette Basin Context

Land use and development along the mainstem Willamette since the late 1800s has dramatically altered the form and function of the river, its tributaries, and floodplains

View of Willamette River near Milwaukie, Oregon, east of Portland, approx. 1948. Photo from Oregon Historical Society.



Willamette Basin Restoration Challenges

- Development has reduced channel length by 44% and led to armoring of over half of the river's 180-mile length
- Dams block upstream fish passage and alter downstream flow and sediment transport
- Impacts from urban areas along with rural land uses have resulted in elevated stream temperatures, suspended sediment, nutrients and bacteria
- Ecologically rare bottomland hardwood forests have declined by more than 70%
- Flood control dams, bank stabilization, streamside logging, large wood removal, systematic closure of side channels, and dredging have greatly reduced channel and floodplain habitat complexity.

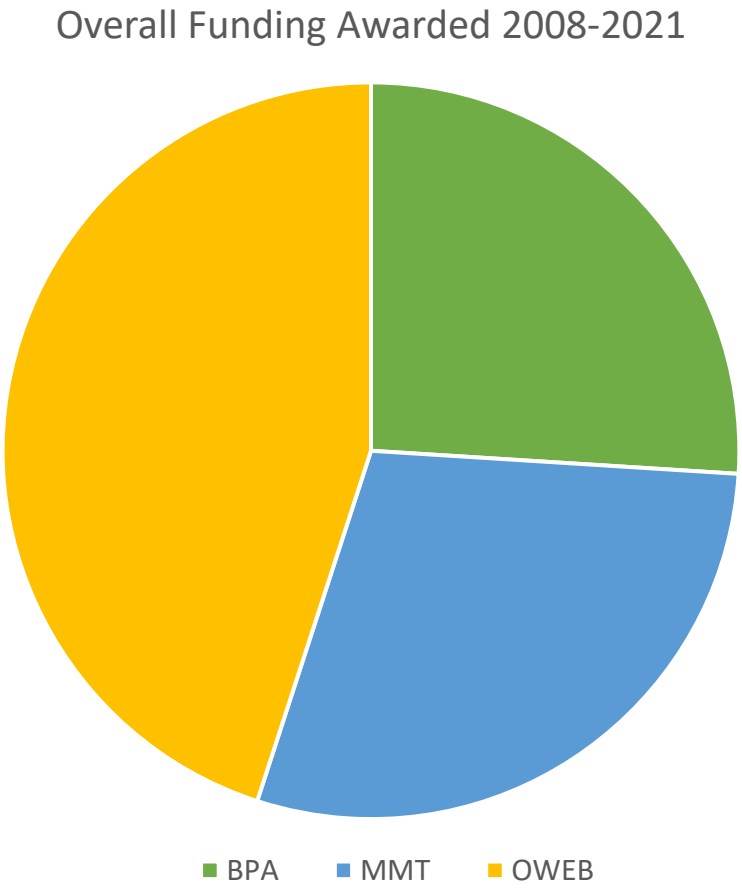
View of Detroit Dam Construction ~1950, Oregon Historical Society Photo.

Overview

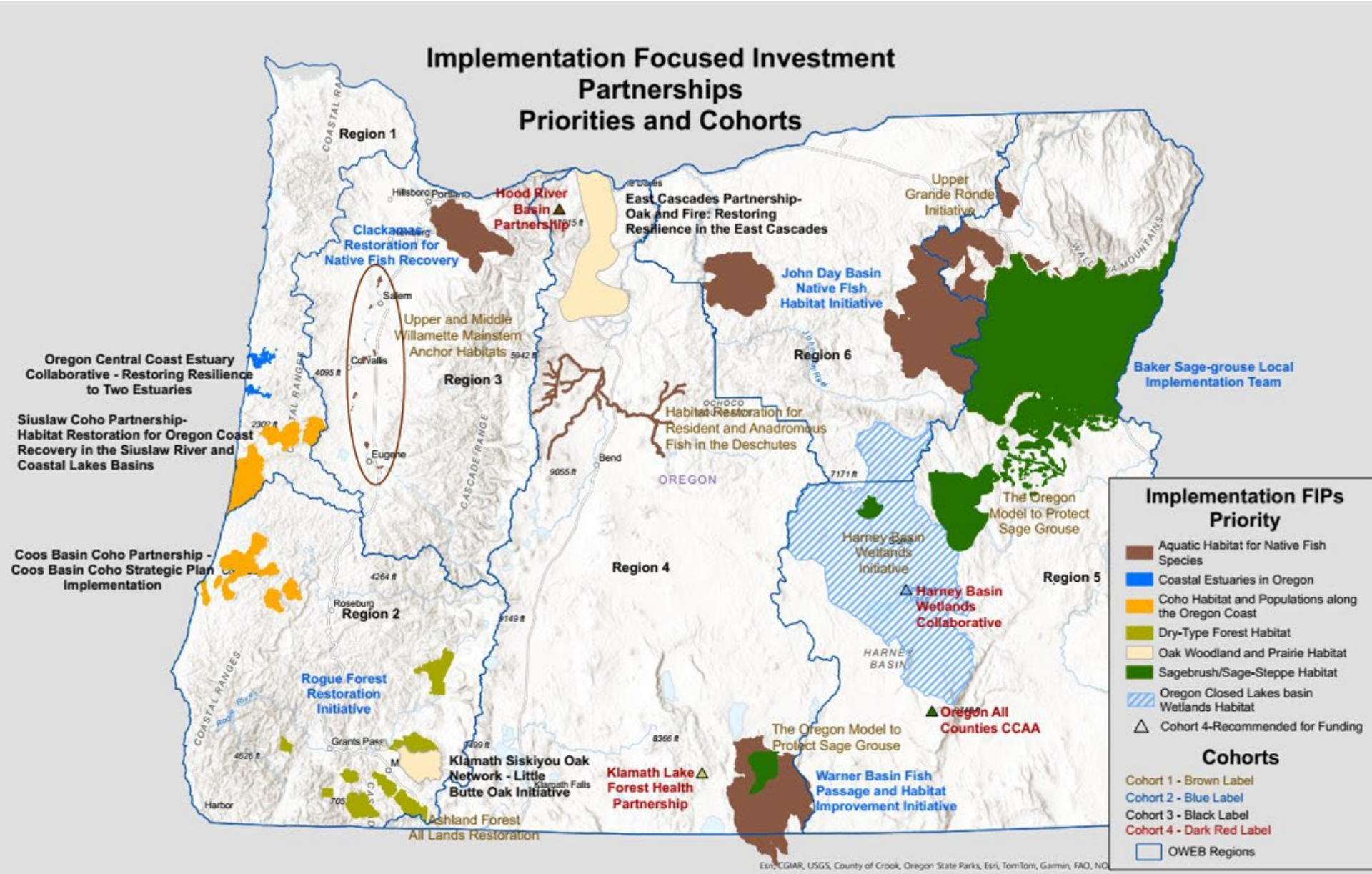
- Willamette Anchor Habitat Investments
- State/Federal/Private funding partnership
- Anchor Habitats
- 3 primary restoration objectives

Grant Offering Historic Context

- One competitive grant offering per year
- Between 2008 - 2021, BPA contributed 26% of overall funding to the program, MMT 29%, and OWEB 45%



OWEB Focused Investments Partnership Investments 2015-2024



Purpose of BPA Willamette Habitat Protection and Restoration Program (2008 – present)

Address impacts of the Willamette Project on anadromous fish habitats pursuant to the 2008 BiOP for USACE's Willamette Valley Project.

RPA 7.1.2

1. Develop project selection criteria to address factors limiting recovery of ESA-listed fish populations.

2. Identify proposals for habitat restoration projects.

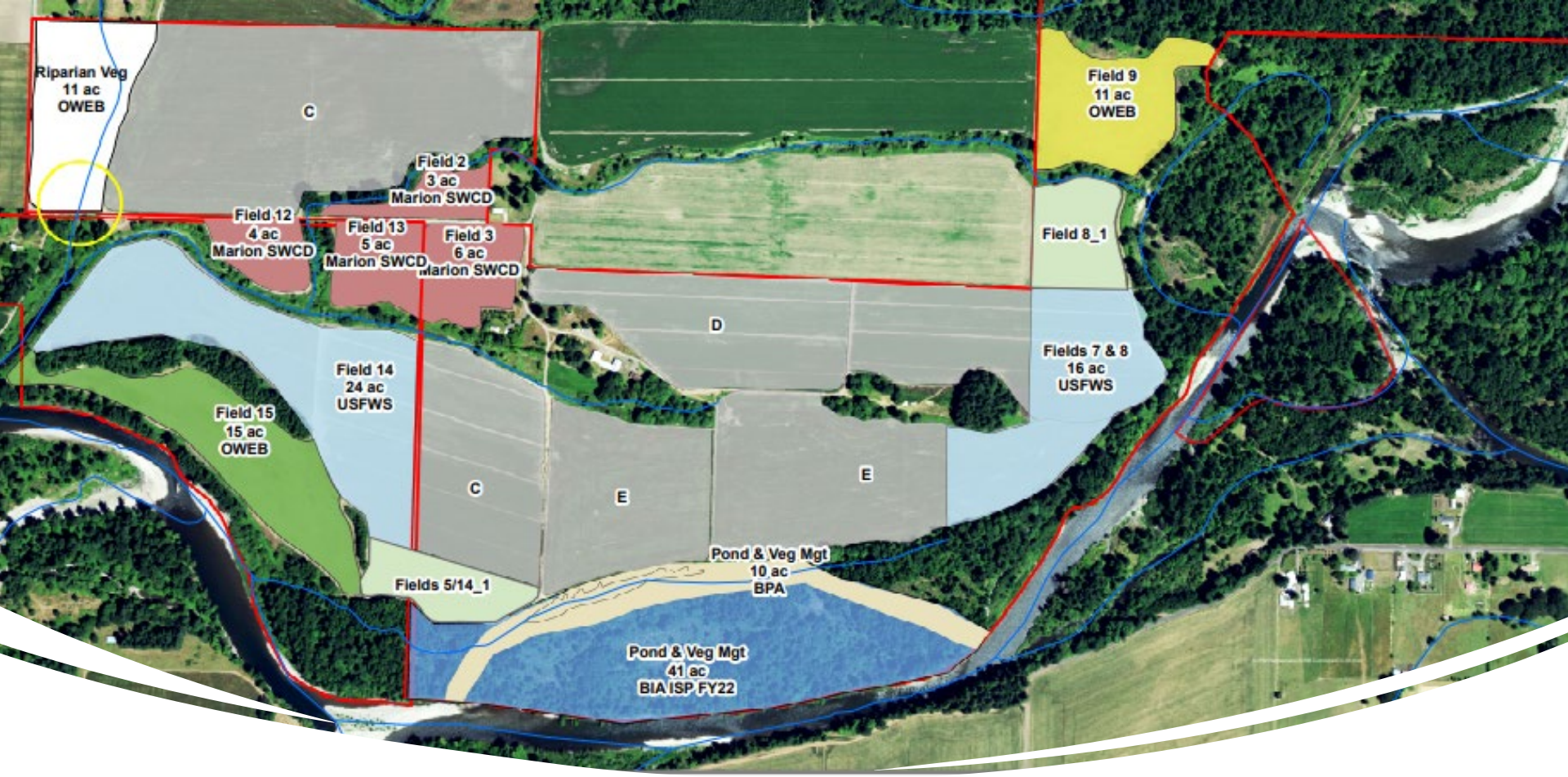
3. Forward proposals to NMFS for review.

4. Fund priority projects

RPA 7.1.3

1. Fund at least two habitat restoration projects each year.

HTT provides strategic guidance and coordination.



Funding preferences

Projects that:

- Occur in the 2-year flood inundation zone of an **anchor habitat.**
- Work at scale across contiguous acres.
- Support native fish species identified in federal recovery plans.
- Address one or more of the following objectives:
    - Increased channel complexity and length;
    - Improved connectivity between the river and its floodplain; and,
    - Expanded geographic extent and improved health of floodplain forests.

Anchor Habitats

Long-term strategy to first protect and restore a series of relatively intact habitats with high conservation values in a stepping-stone fashion along the river corridor.

Anchor habitats are located at major tributary confluences and river sections where there are opportunities to reconnect the river to its historic floodplain.

Willamette River Project Activities 2008-2023

- Increase and enhance floodplain forests
- Reconnect and fill former gravel pits and regrade pond boundaries
- Increase inundation by modifying topography and human-made barriers to flow
- Treat invasive aquatic plants
- Modify artificial barriers, including revetments

Accomplishments 2008-2023

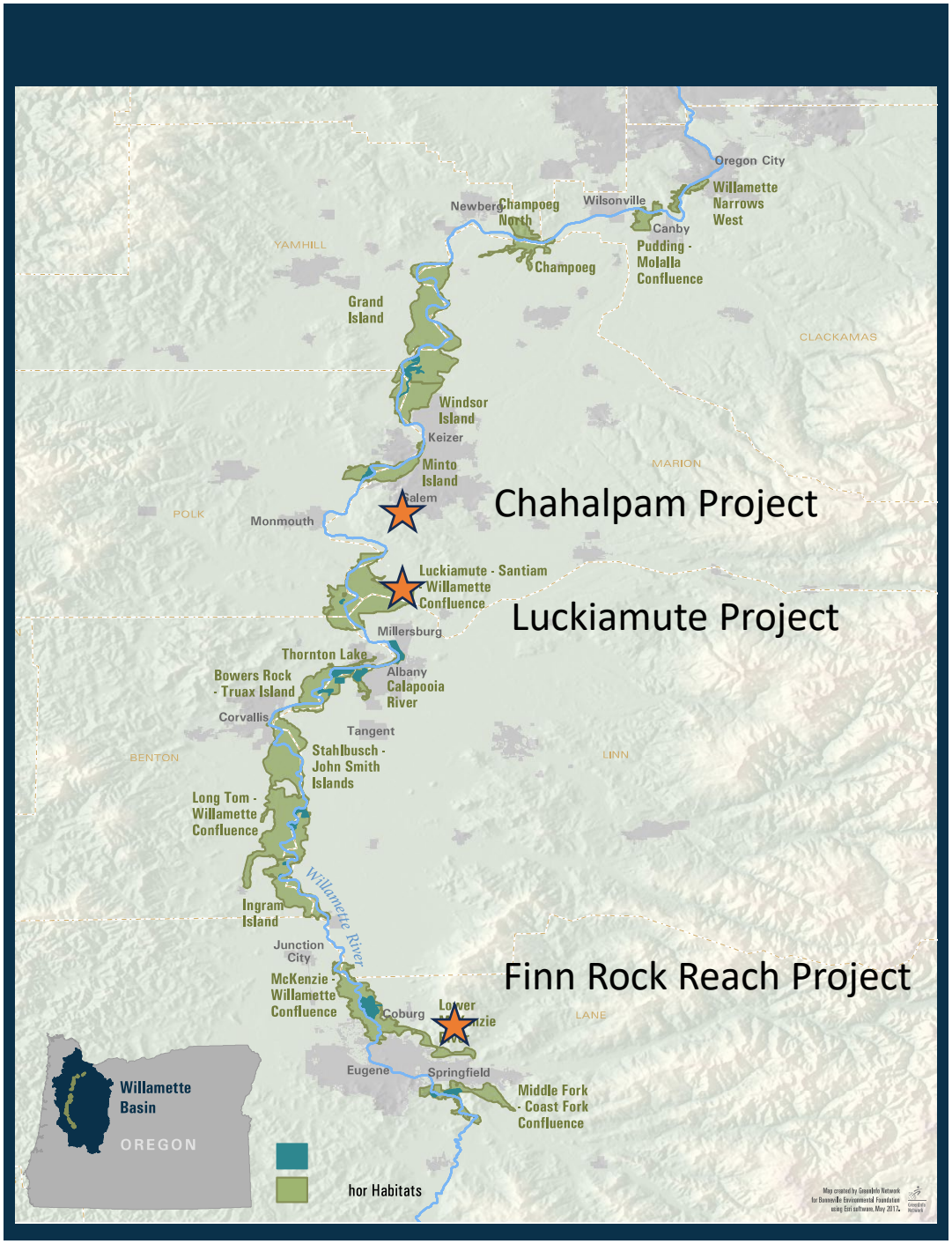
130+	Project investments since 2008
>5,200 acres	Floodplain and riparian forest restoration
>23 miles	Side channel enhancement
>450 acres	Floodplain reconnection (2016-2023)
.33 miles	Revetments modified

Technical review team at project site, 2017

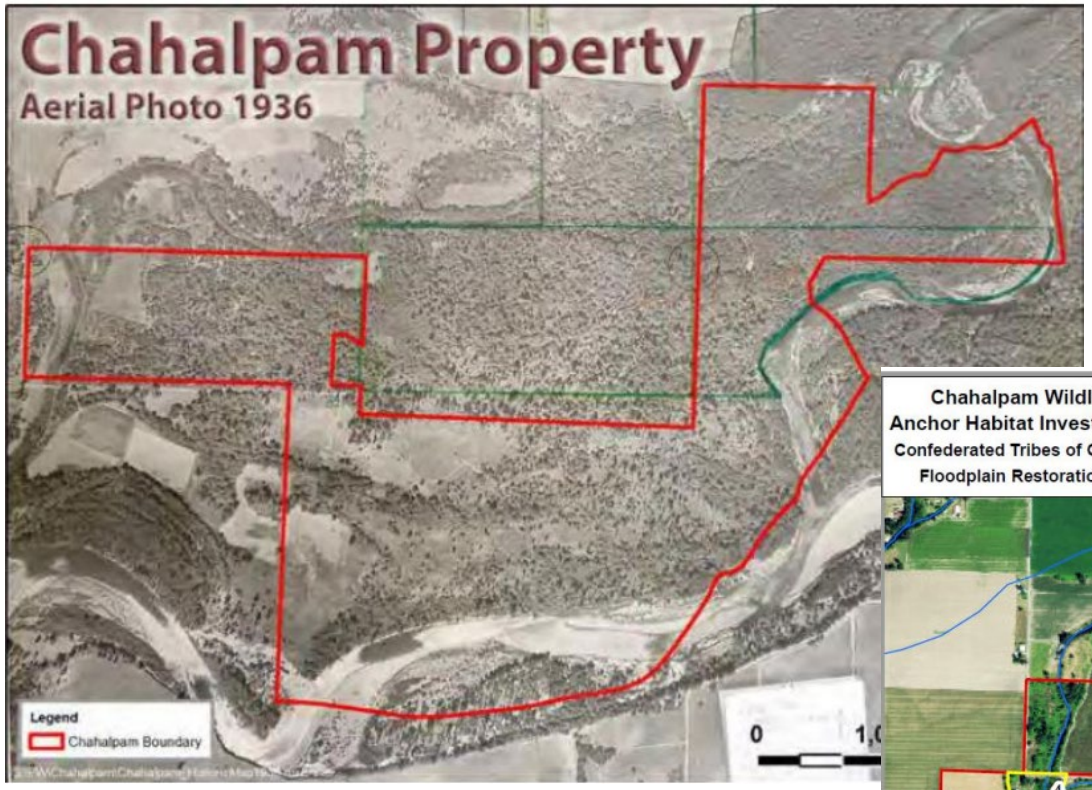
Harkens Lake floodplain inundation, 2019

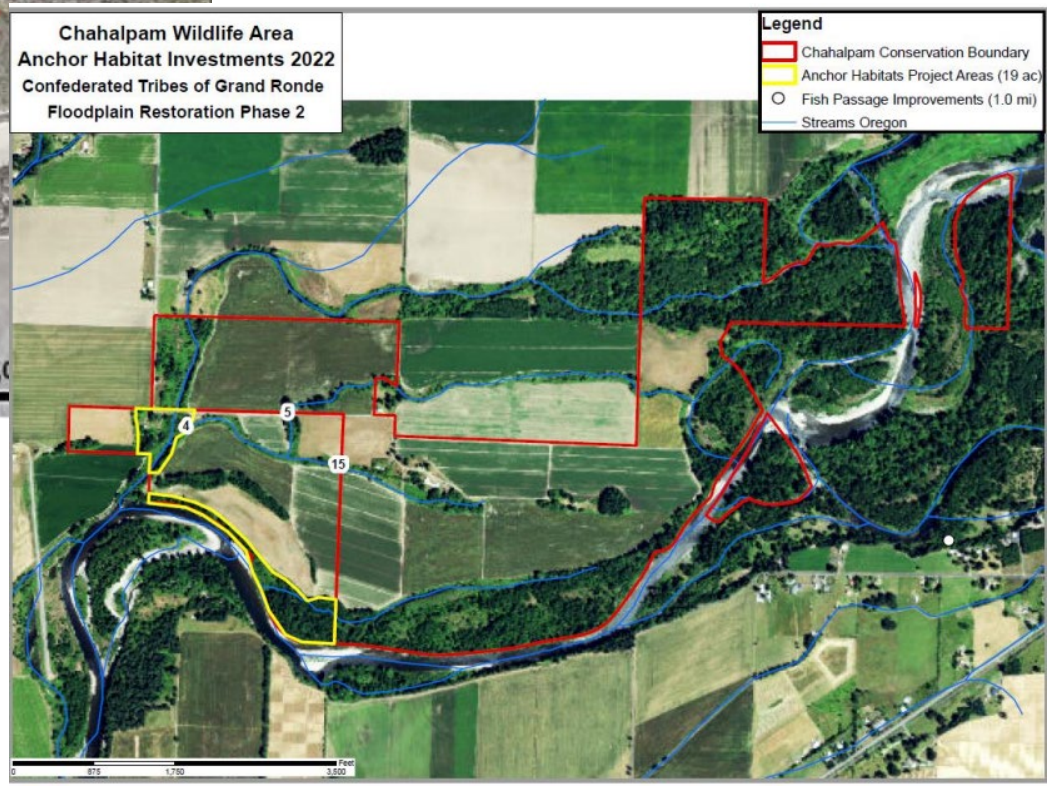
Oregon chub, first fish species to be delisted from ESA, 2015

Highlighted Partner projects:



Chahalpam Crossing and Floodplain Restoration (88241 and 92279)





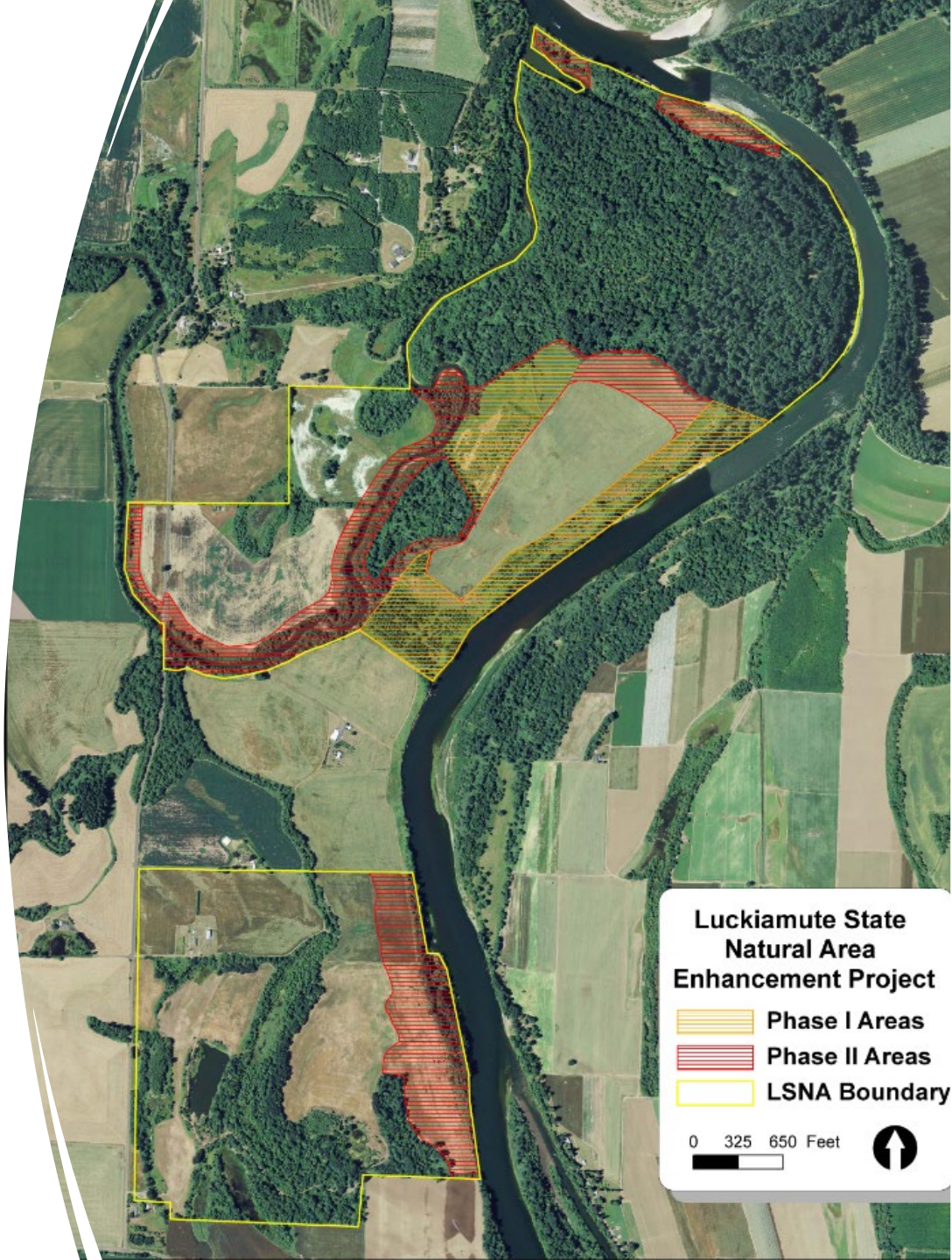
Project Partners: Confederated Tribes of Grand Ronde, USFWS, ODFW, North Santiam Watershed Council and Marion Soil & Water Conservation District

Chahalpam Crossing and Floodplain Restoration *(88241 and 92279)*

- Chahalpam is a 462-acre conservation site located along the North Santiam River.
- The Confederated Tribes of Grand Ronde re-acquired Chahalpam in phases from 2013-2019 through the Willamette Wildlife Mitigation Program. The site is permanently protected by three conservation easements held by the BPA.
- Restoration to improve habitat quantity, quality, and complexity necessary for native fish and wildlife species is on-going at the site.
- Restoration has been supported by $545,744 in BPA funding and OWEB investments to date are $298,852.

Luckiamute State Natural Area *(71779, 88336, 82741)*

- Joint OWEB/BPA/MMT investment that started in 2008.
- Over this project's ~15 year implementation timeframe that included 5 phases:
  - Over 500 acres of weed control and revegetation have been completed
  - Over 600,000 native trees and shrubs have been planted
  - 9.5 acres of floodplain forest has been re-connected
  - Existing high quality riparian "gallery" forest has been protected
  - Currently, project partners are stewarding and managing a total of 535 acres of riparian forest and wetland habitat.



Luckiamute State Natural Area
Before/after riparian re-vegetation treatments.

2013, prior to treatment

2022, following treatment

Luckiamute State Natural Area
Before/after riparian re-vegetation treatments.

2014, prior to treatment

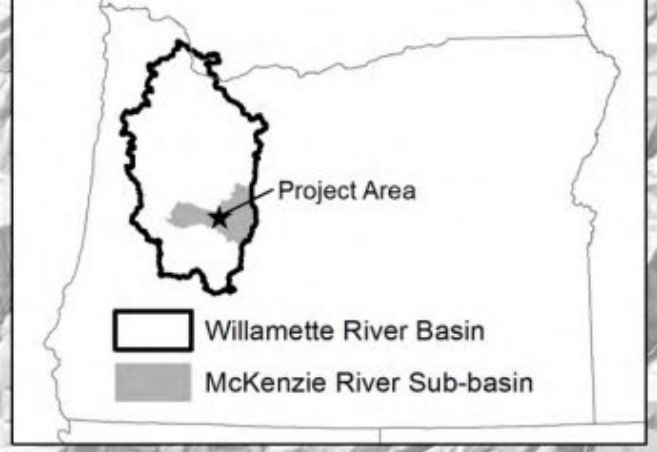
2022, following treatment

Finn Rock Reach (87689 and 90938)

- The 85-acre Finn Rock Reach project is on land owned by McKenzie River Trust
- Restoration project funding sources include: BPA, Federal infrastructure funds, Oregon Watershed and Enhancement Board, Eugene Water and Electric Board and Federal Emergency Management Agency
- Project goals are to: restore ecological processes that maintain a healthy, diverse, and resilient ecosystem to the project area by increasing the area of floodplain inundation at base flow conditions; increase surface roughness elements; and restore a diverse native plant assemblage in selected disturbed areas (long term goal, not funded by BPA).

Finn Rock Reach, before/after the 2020 Holiday Farm Fire

Middle McKenzie Floodplain Enhancement Project Context Map



Blue River Dam & Reservoir

McKenzie River

Horse Creek

Phase I

Blue River

South Fork McKenzie River

Finn Rock

Phase II

Cougar Dam & Reservoir

Quartz Creek

Spring Chinook Salmon Distribution

Middle McKenzie Floodplain Enhancement Project Area

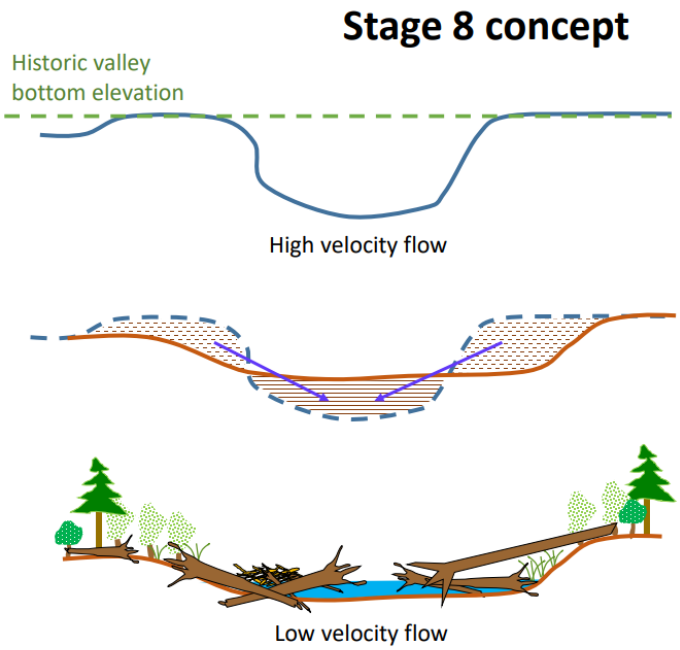
Restoration Sites

0 1 2 Miles

N

Finn Rock Reach

Phase 1 post construction
8/19/2021



1. Existing channel down cut below historic elevation
2. Banks pulled and channel partially filled
3. Wood and plantings added to maximize habitat complexity

Finn Rock Reach Phase 2 Post-construction

Summary

Looking back 2008-2021…

- Jointly funded partnership supported significant restoration accomplishments
- Research/monitoring yielded insights on habitat limitations and role of restoration

Present state 2022-2025

- BPA is the sole funder with this mainstem focus ($700k/year)
- Need flexible approach to ensure partners continue to access available funds
- Science Symposium planned for fall 2024 to re-energize the Willamette Community and share research findings and spur conversations between restoration practitioners and latest research

Our Willamette Waters: Science in Service of Policy, Management and Restoration

SAVE THE DATE! November 12-13, 2024

La Sells Stewart Center, Oregon State University, Corvallis, OR

What are key river policy and management issues, and how can science best inform these issues?

What is the state of the science for aquatic species, water temperature and other river conditions across the stream network?

This 2-day conference will begin to address these and other topics. Events include all-attendee presentations and workshop-style interactive sessions focusing on biological and geophysical trends, policy issues, and river management.

Registration opens September 1

For more information contact: Becky Flitcroft (Rebecca.flitcroft@usda.gov), Guillermo Giannico (giannico@oregonstate.edu), Rose Wallick (rosewall@usgs.gov)

Acknowledgements

Many people from many agencies, organizations and universities have contributed to Willamette Restoration programs and the continual refinement of these programs.

Agencies and organizations that have served on the Willamette Habitat Technical Team and Technical Review Team:

Bonneville Power Administration, City of Portland BES, Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz Indians, Confederated Tribes of Warm Springs, Meyer Memorial Trust, NOAA Fisheries, Northwest Power and Conservation Council, Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, Oregon Department of Geology and Minerals, Oregon Parks and Recreation Department, Oregon Department of State Lands, Oregon Metro, Oregon State University, OWEB, US Army Corps of Engineers, US Fish and Wildlife Service, US Forest Service, US Geological Survey, and University of Oregon.

Organizations leading and contributing to Willamette River Restoration:
Benton SWCD, Bonneville Environmental Foundation, Calapooia Watershed Council, City of Eugene, Clackamas SWCD, Coast Fork Willamette Watershed Council, Confederated Tribes of Grand Ronde, Friends of Buford Park & Mt. Pisgah, Greenbelt Land Trust, Long Tom Watershed Council, Luckiamute Watershed Council, McKenzie River Trust, McKenzie Watershed Council, Middle Fork Willamette Watershed Council, North Santiam Watershed Council, South Santiam Watershed Council, The Nature Conservancy, Trust for Public Land, and Willamette Riverkeeper.

All photos used in this presentation are from project records/websites from the respective partnerships.

Finn Rock Reach Ph 2 post-construction – Year 1

DJI 0040 (youtube.com)

Hydrograph during timeframe in video