

WDFW Fish Passage Barrier Inventory & Assessment Program – An Overview

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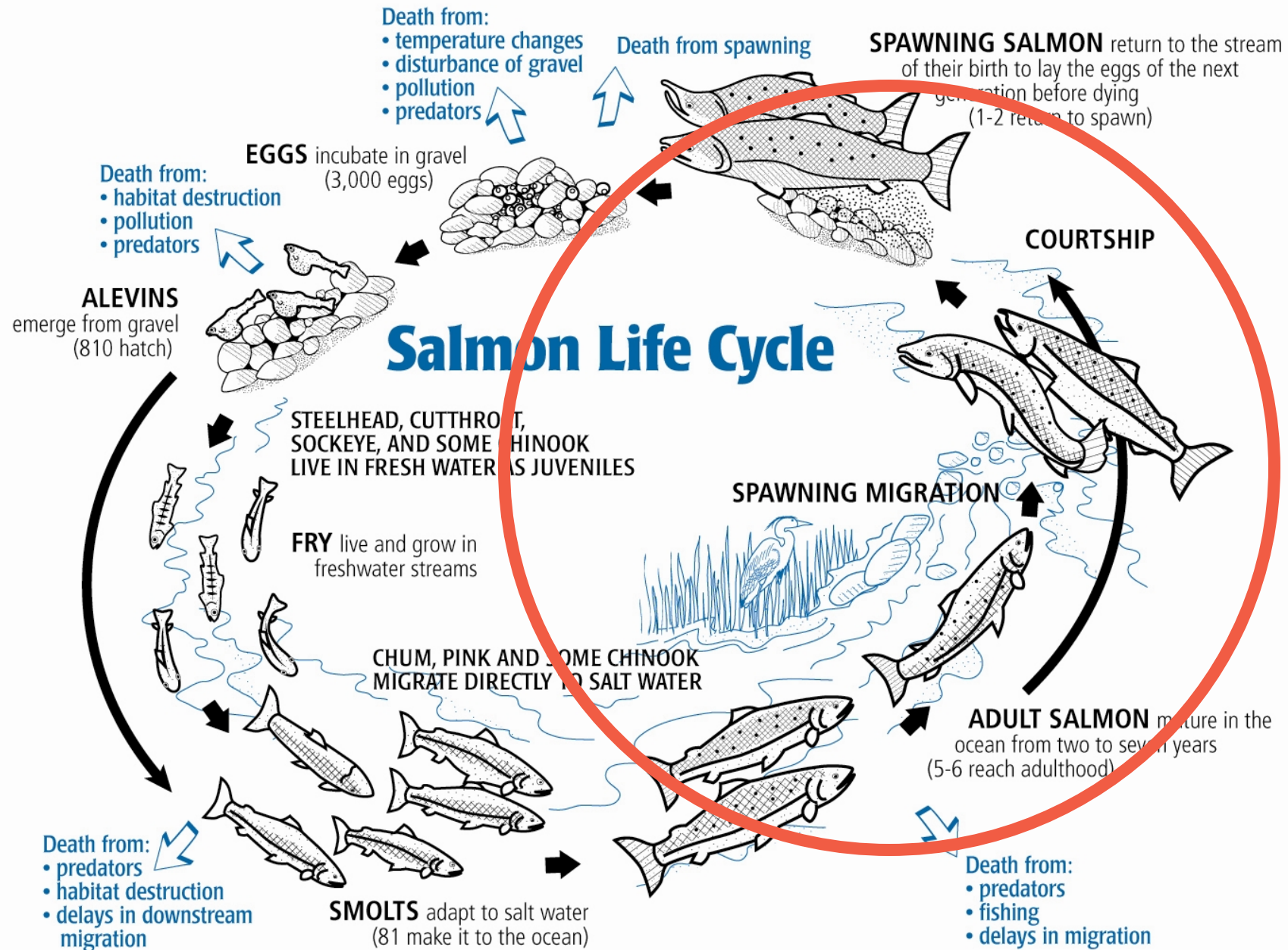
Habitat Program, WDFW

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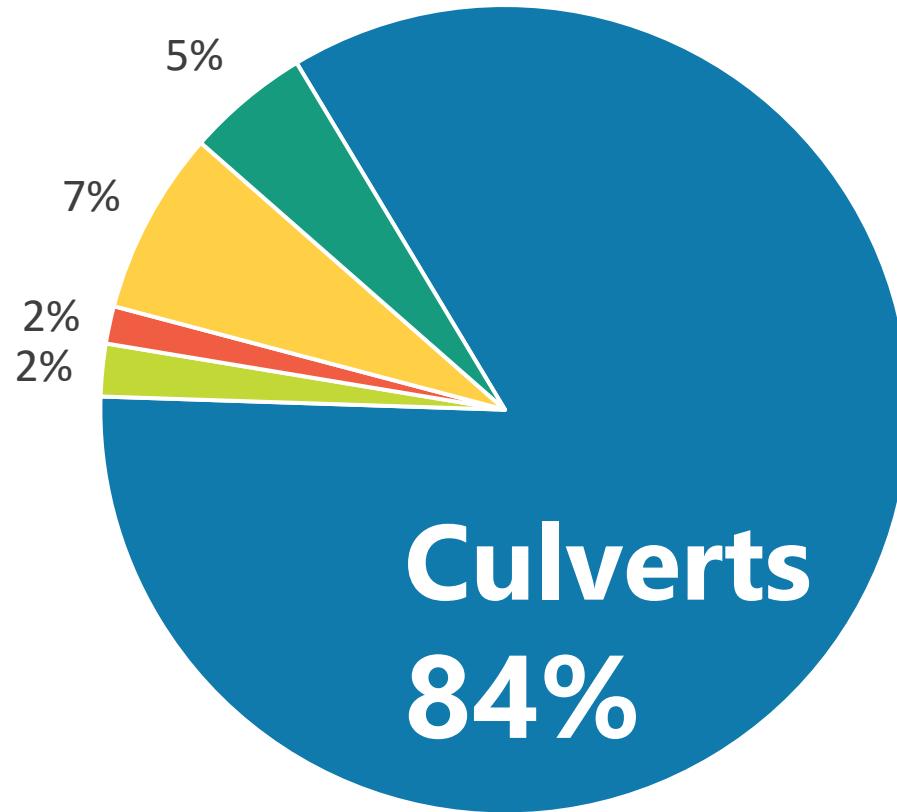




What is “Fish Passage”?



Barrier Feature Types



■ Culvert ■ Non-Culvert Xing ■ Other ■ Dam ■ Natural





WDFW Fish Passage Inventory & Assessment

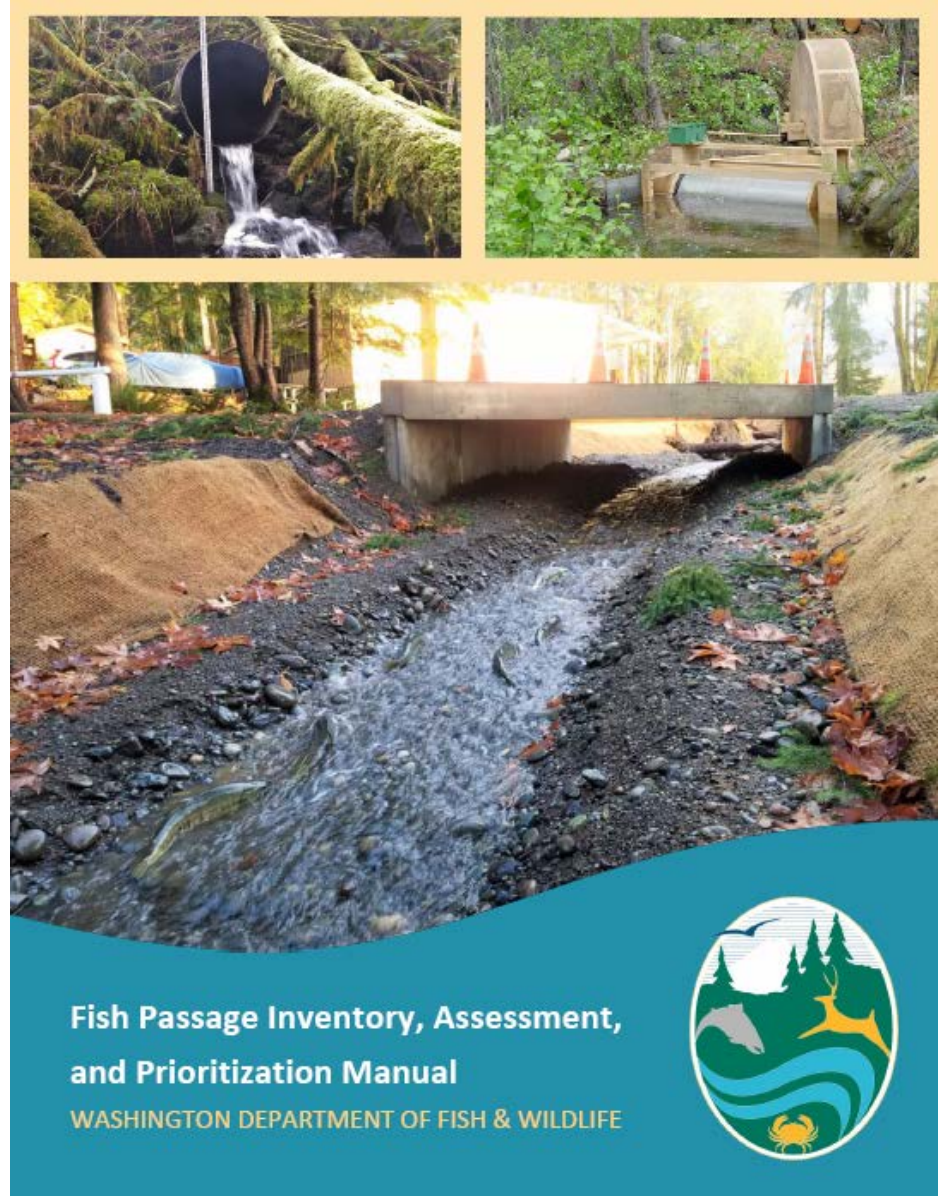
Fish Passage Inventory & Assessment Section

- Maintain barrier assessment & habitat survey **protocols**, 30+ years
- Staff a **field crew** to conduct barrier assessments & habitat surveys
- Provide **free training** on protocols & ongoing **technical assistance**
- Manage data in a **centralized database**, Fish Passage & Diversion Screening Inventory (FPDSI) database
- Database available to the public through the **Fish Passage Map App**



Fish Passage Inventory, Assessment, and Prioritization Manual (2019)

- Details our current fish passage barrier criteria
- Used for the **U.S. vs Washington Culvert Injunction**



Barrier Criteria



Water Surface Drop



Shallow Water Depth



High Water Velocity



Barrier Criteria: Based on Swimming Ability of Adult Salmonids

Weak Swimming and Leaping **6" Trout**

- Water Surface Drop Criteria
- Velocity Criteria

Large Bodied **Adult Chinook**

- Depth Criteria



Example: Barrier Assessment for Culverts



Level A – Quickly identifies obvious water surface drop and slope barriers

- slope is surrogate for depth and velocity in culverts



Level B – Hydraulic analysis to determine depth and velocity barriers



Additional Barrier Conditions



Sediment/Debris



Racks/Gates



Damage or Deterioration



Fish Passage Database - FPDSI

Centralized repository
for statewide fish
passage data

- Barriers
- Diversions
- Screening

Culvert Details								Level A Parameters				
ID	Shape	Material	Span	Rise	Length	WDIC	Apron	WSDrop	Location	Countersunk	Backwater	Slope (%)
1.1	RND	PCC	1.52	1.52	19.20	0.26	BE	0.00		No	0	2.08

All dimensions in meters

Channel Description

Toe Width (m):

Average Width (m):

Culvert/Stream Width Ratio:

Plunge Pool

Length (m):

Max Depth (m):

OHW Width (m):

Road

Fill Depth (m):



Assessment Results

Barrier: Passability (%): Method:

Reason: Fishway Present: Recheck:

Fish Passage & Diversion Screening Inventory (FPDSI) Database



Inventory and Assessment – field crews



Data collected by WDFW field crews

Since at least the 90s

Currently 10 crews – team of 2 technicians

Statewide but mostly western WA



What determines where we work?

- Federal Culvert Case Injunction Obligations
- Contracts
- WDFW needs



Inventory & Assessment Work Overview

- **Federal Culvert Case Injunction Obligations**
 - WSDOT, WDFW, State Parks
- **Contracts**
 - Assoc. of Cities, Assoc. of Counties, & Sound Transit
- **WDFW programs, projects, & due diligence**
 - Fish Barrier Removal Board (FBRB) - grant ranking support
 - Effectiveness monitoring project - stream simulation design
 - New property acquisition - culvert surveys



Training

- Free training offered
- Data collected by outside groups
- Ongoing tech assist
- Data submitted to the FPDSI database

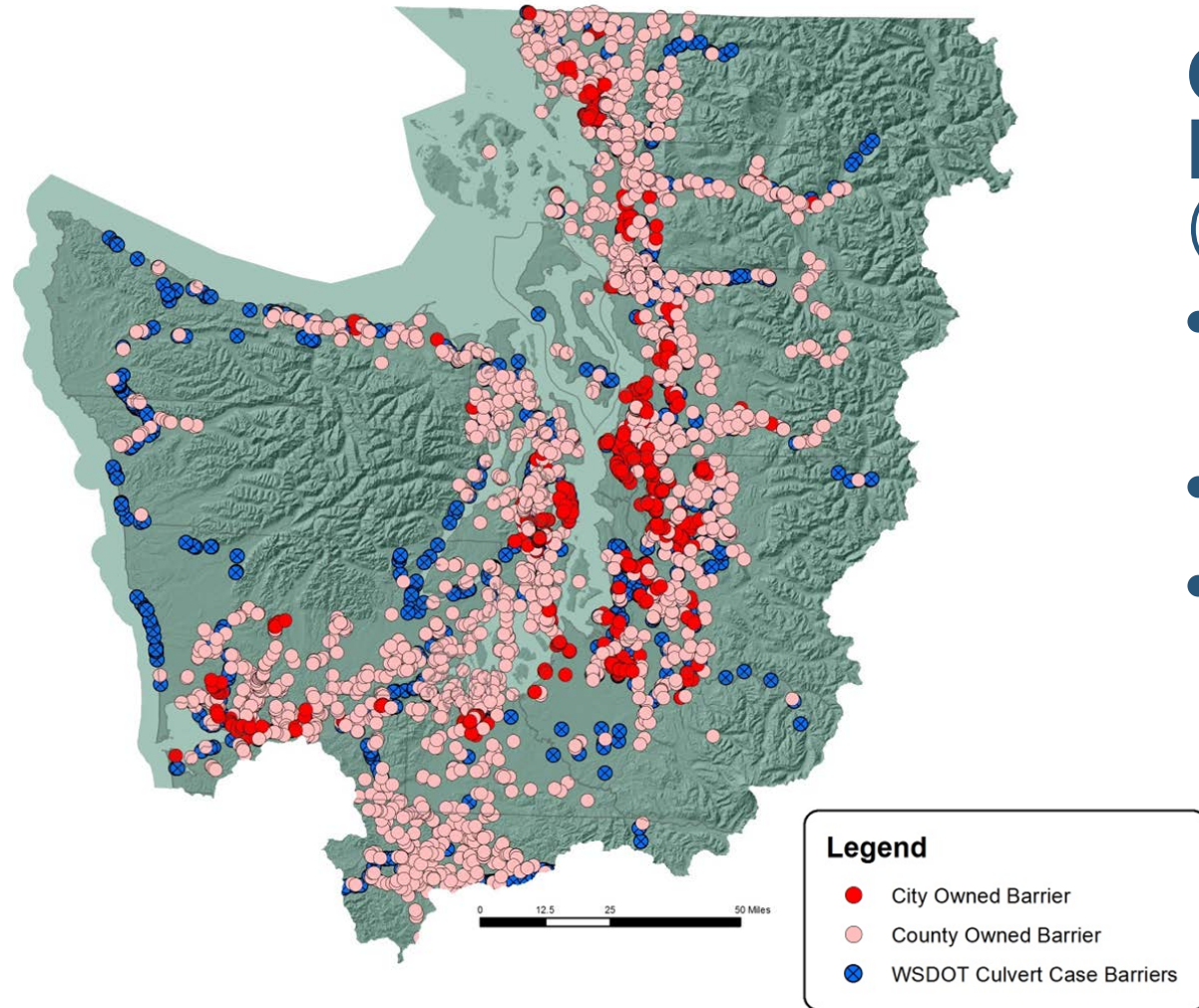


Training

- Adopt-A-Stream
- Cascade FEG
- Central WA Univ.
- City of Bellingham
- City of Redmond
- City of Sammamish
- City of Sumner
- Colville Tribe
- Dept. Nat. Resources
- Evergreen College
- Grays Harbor CD
- Hoh Tribe
- Hood Canal SEG
- Island Co.
- Jamestown Tribe
- King Co.
- Kitsap Co.
- Kittitas CD
- Klickitat CD
- Mid Col. Fisheries
- Nisqually Tribe
- NMFS
- N. Oly. Salm. Coal.
- North Yakima CD
- Pac. Coast Salm. Coal.
- Pend Oreille Co.
- Pierce Co.
- Quinault Indian Nation
- Skagit Co.
- Skagit FEG
- Skokomish Tribe
- Snohomish Co.
- Snoqualmie Tribe
- Spokane Co.
- Spokane Tribe
- S. Puget Sound SEG
- Suquamish Tribe
- Tacoma Power
- Thurston Co.
- Trout Unlimited
- Underwood CD
- Upp. Skagit Ind. Tribe
- USACE
- US Forest Service
- USFWS
- USGS
- WA Cons. Corps
- Weyerhaeuser
- Wild Fish Cons.
- WSDOT
- Yakama Nation



Magnitude of the Problem



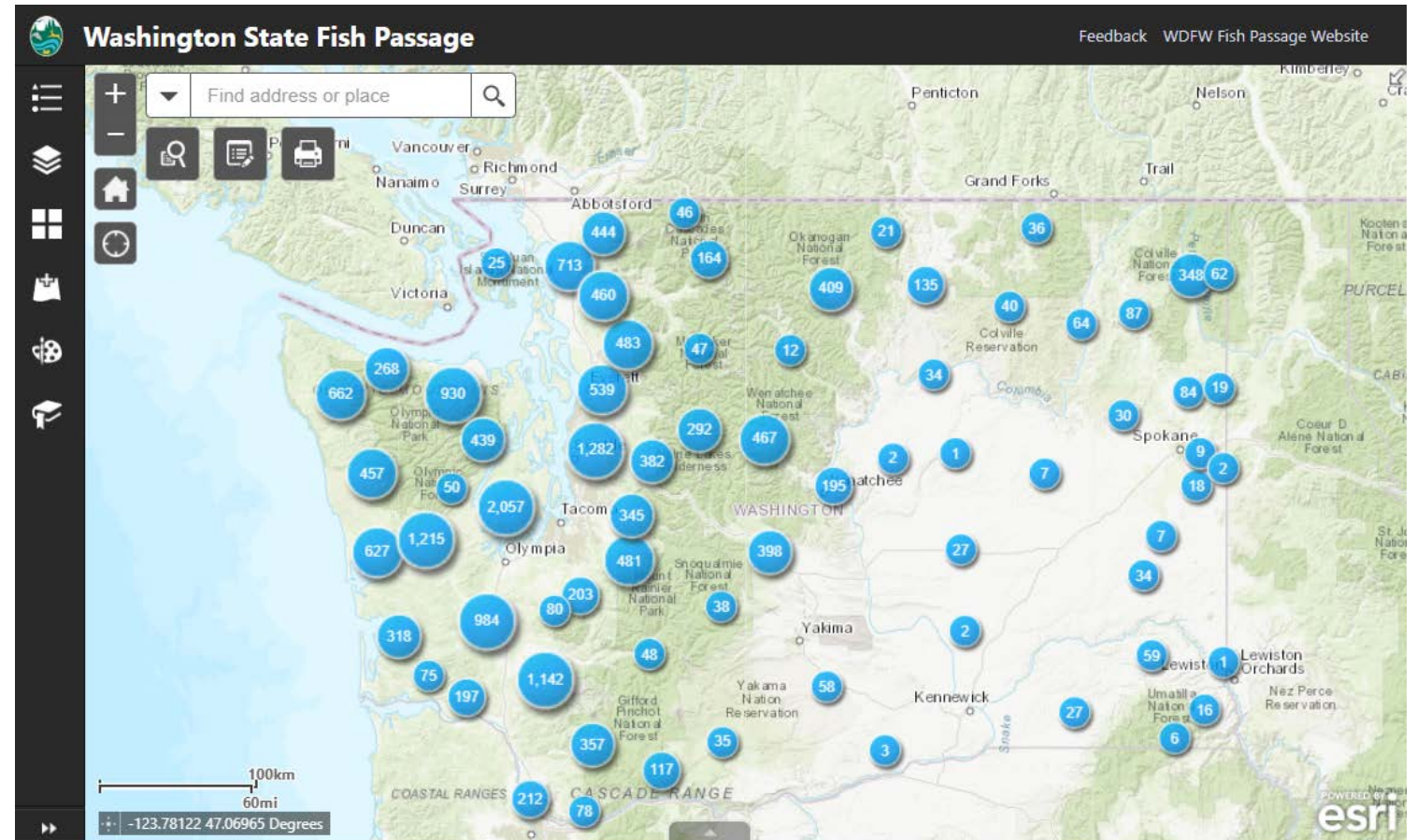
Over 19,000 known barriers statewide
(complete and partial)

- Barrier inventory is incomplete
- Number increases weekly
- Image snapshot of ownerships



Fish Passage Web Application

- Updated weekly
- Identify Projects
- Compare relative benefit



geodataservices.wdfw.wa.gov/hp/fishpassage



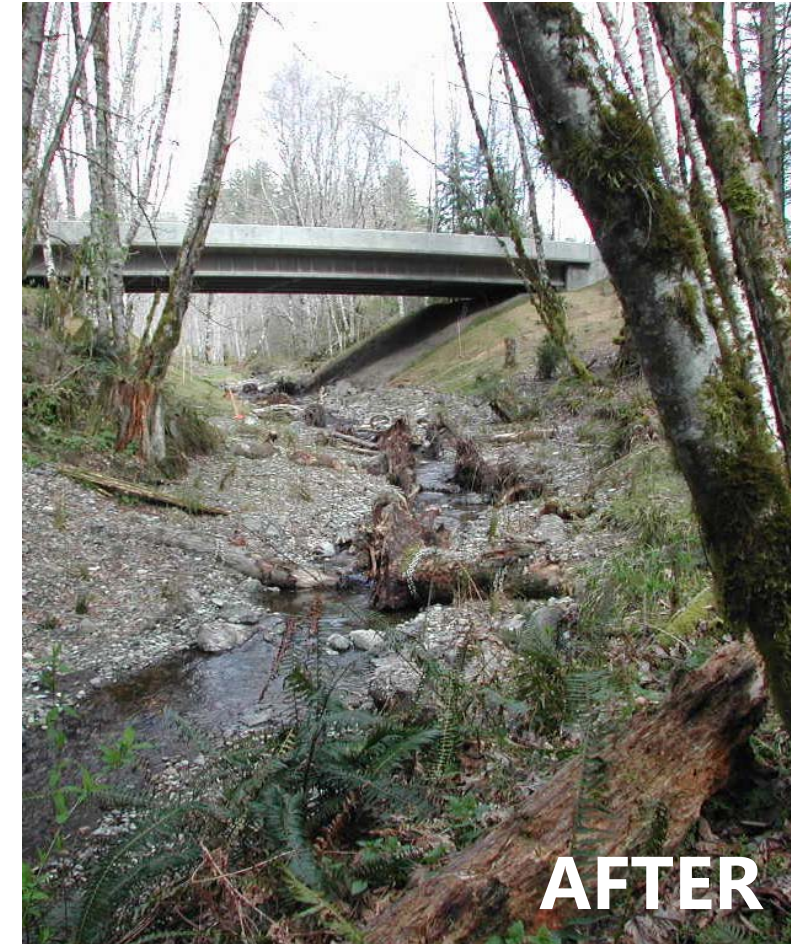
Habitat Surveys

- To quantify and qualify habitat gain
- Variables collected depend on survey goals
- Performed by WDFW and other organizations
- Training available



Contributes to Better Restoration Outcomes

- I&A foundation for prioritization
- Supports identification of projects that restore access to salmon habitat.



Lambert Creek, Lewis Co – at least 2.9 km of habitat gain



Questions?





Questions?