

Water Quality Status and Trends in The Upper Chehalis River Basin: Are We Making Progress?

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Environmental Assessment Program*

Ecology's Role

Clean Water Act



Water Quality Standards

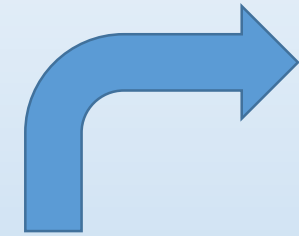
Designated uses



PROTECT

When a stream is not meeting water quality standards, Ecology begins a formal process to clean up that water body – a TMDL

T_{total}
M_{maximum}
D_{aily}
L_{oad}

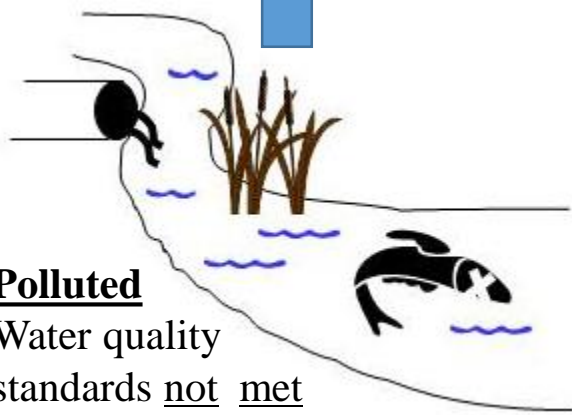


Study

- Identifies sources of pollution
- Calculates amounts from each source
- Estimates necessary pollutant reductions

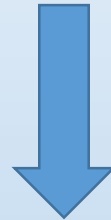


Polluted
Water quality
standards not met



Implementation Plan

- Identifies controls or best management practices needed



Implementation

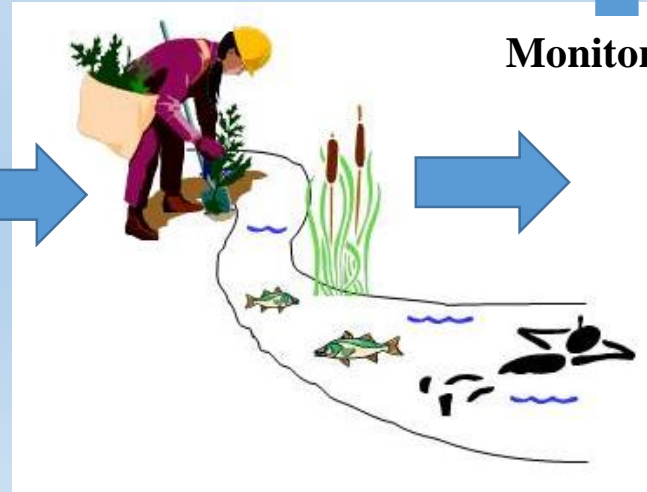
- Grants and loans made available to implement plan



Clean

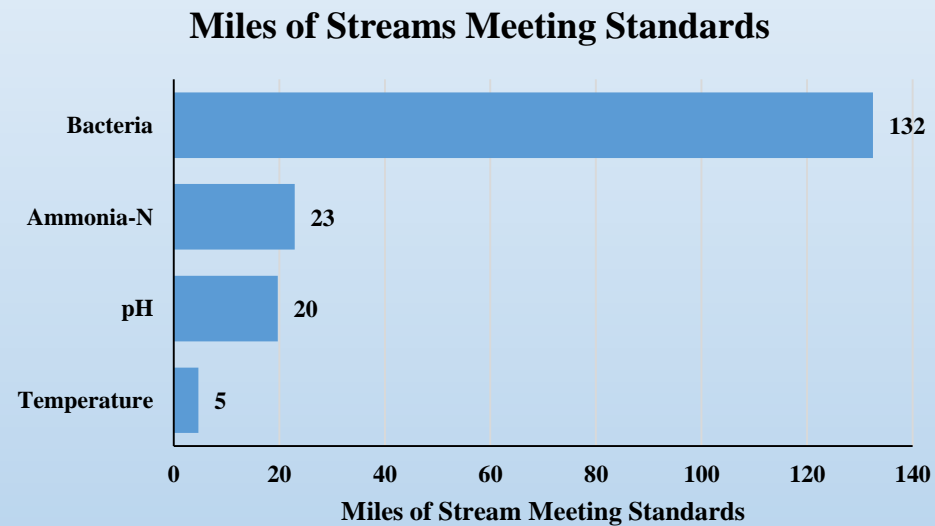
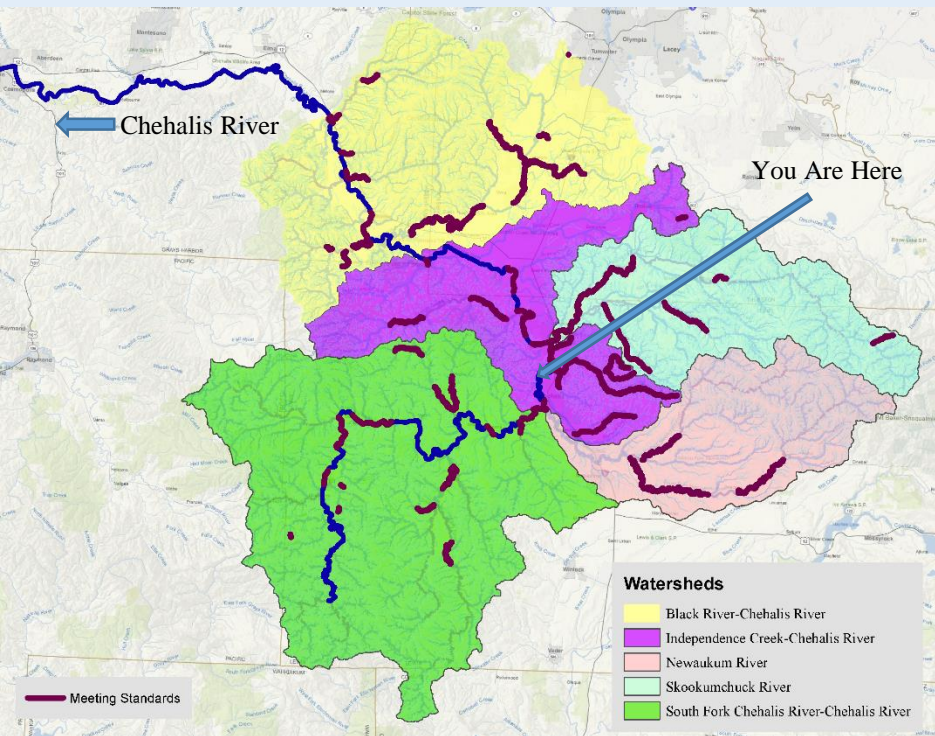
Water quality
standards met

Monitoring



Upper Chehalis – Status

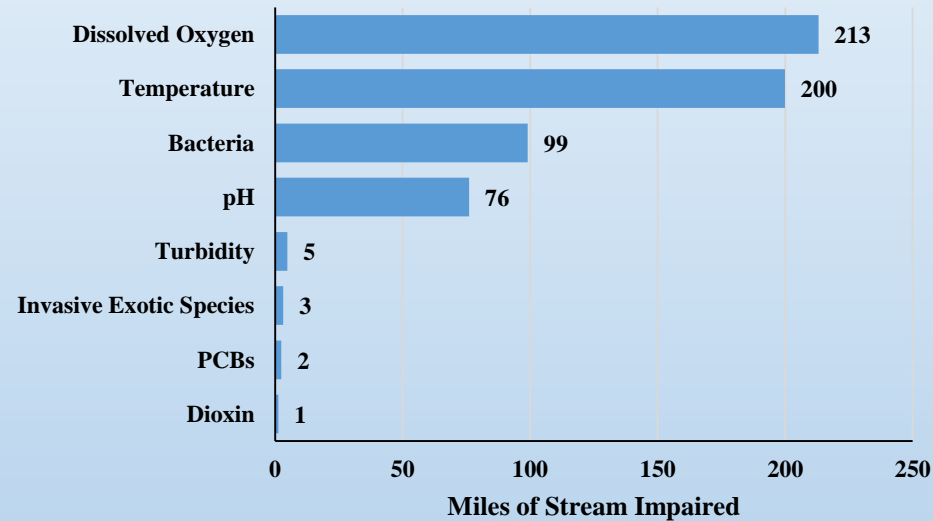
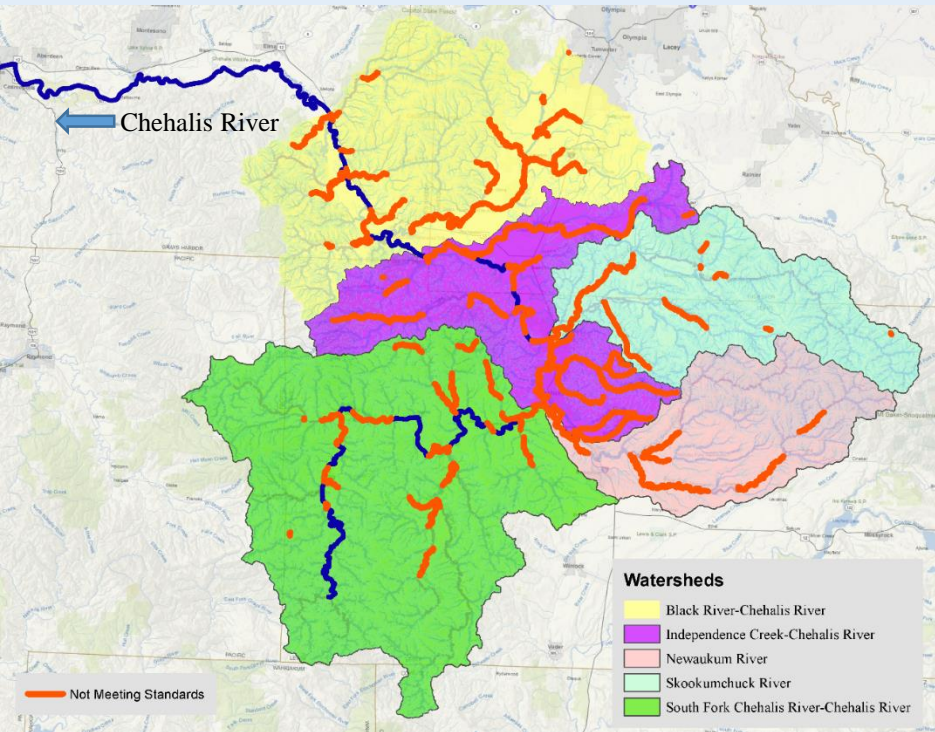
Meets standards



- 9257 miles of waterways in Upper Chehalis
- 780 miles assessed (8% of Watershed)
- 30% of waters assessed meeting water quality standards

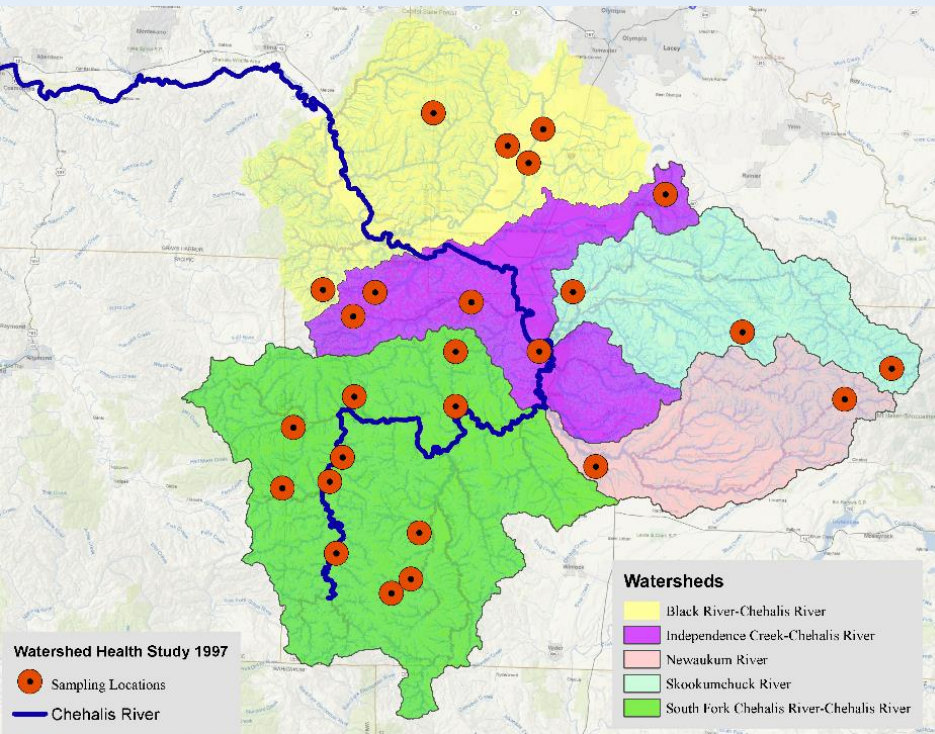
Upper Chehalis – Status

Not meeting standards



- 9257 miles of streams in Upper Chehalis
- 780 miles assessed (8% of Watershed)
- 70% of water assessed not meeting water quality standards

Upper Chehalis – Status (1997)



What is the condition of rivers and streams across the upper Chehalis?

- Biological condition: 5 % poor, 35% fair, 60% good

What are the leading problems in rivers and streams within the upper Chehalis?

- >40% Nutrient pollution
- 24% Riparian vegetation-poor
- 20% Riparian disturbance-high
- 15% Sediments-excess

1997 EMAP Survey of Ecological Condition

Data Source:

Results of a [1997 EMAP assessment](#) using a probability-based selection of sampling locations.

Implementation Plan- Grants and Loans

Upper Chehalis TMDLs

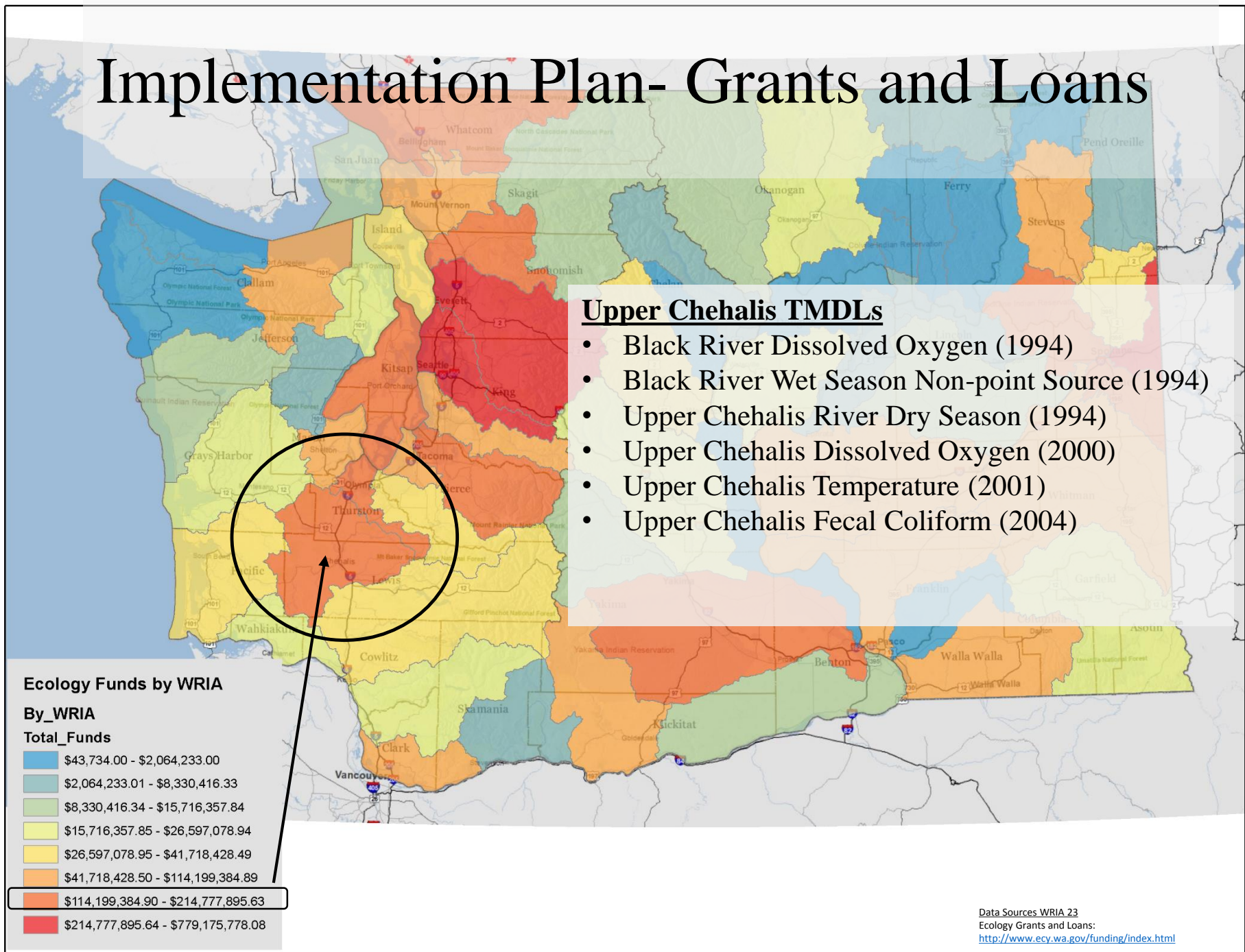
- Black River Dissolved Oxygen (1994)
- Black River Wet Season Non-point Source (1994)
- Upper Chehalis River Dry Season (1994)
- Upper Chehalis Dissolved Oxygen (2000)
- Upper Chehalis Temperature (2001)
- Upper Chehalis Fecal Coliform (2004)

Ecology Funds by WRIA

By_WRIA

Total_Funds

| | |
|--|-------------------------------------|
| | \$43,734.00 - \$2,064,233.00 |
| | \$2,064,233.01 - \$8,330,416.33 |
| | \$8,330,416.34 - \$15,716,357.84 |
| | \$15,716,357.85 - \$26,597,078.94 |
| | \$26,597,078.95 - \$41,718,428.49 |
| | \$41,718,428.50 - \$114,199,384.89 |
| | \$114,199,384.90 - \$214,777,895.63 |
| | \$214,777,895.64 - \$779,175,778.08 |



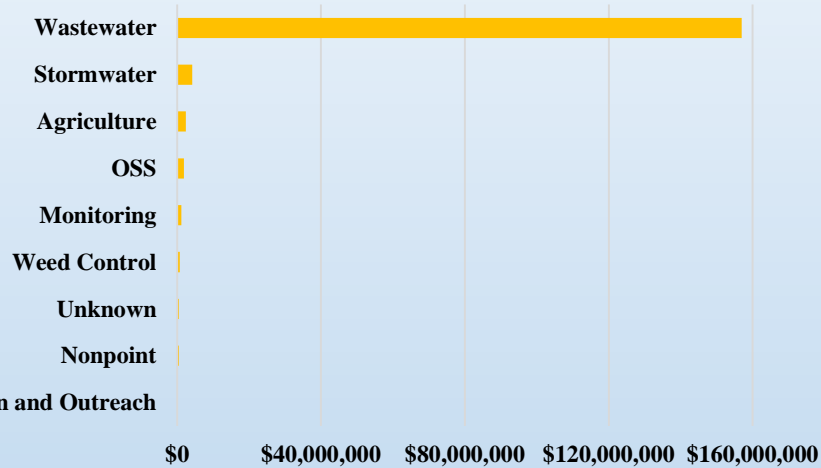
Data Sources WRIA 23

Ecology Grants and Loans:

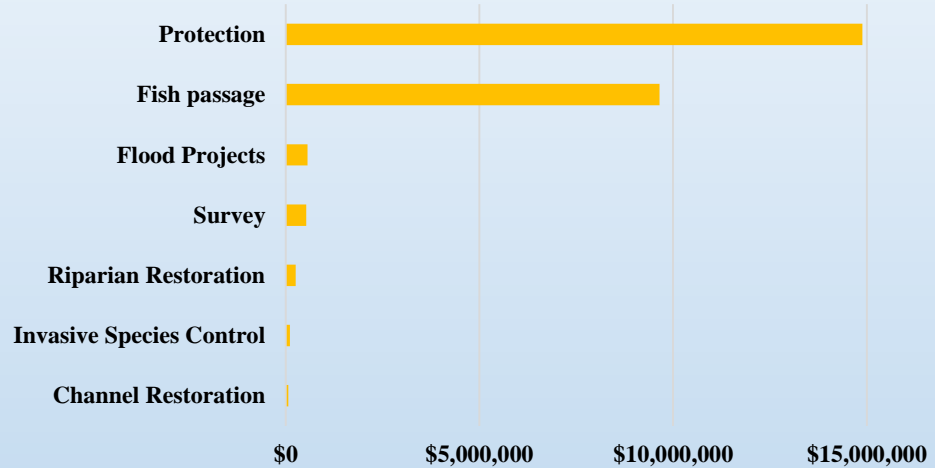
<http://www.ecy.wa.gov/funding/index.html>

Implementation- Grants and Loans

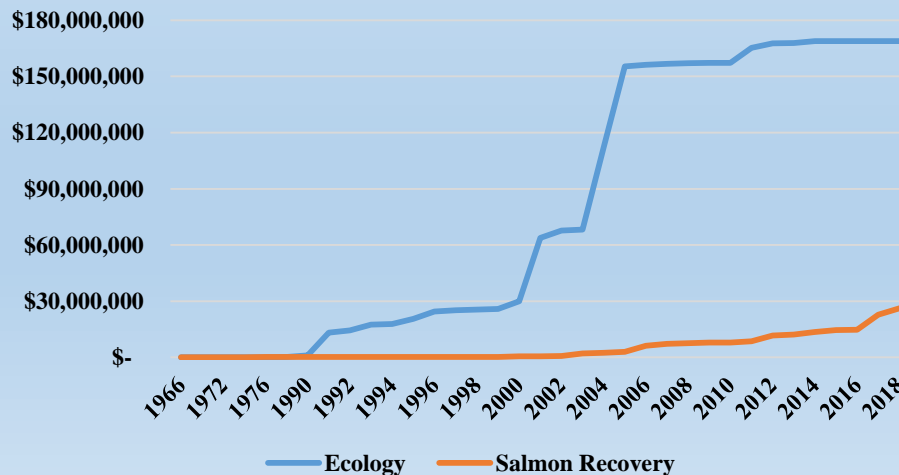
Ecology Grants and Loans-TMDL



Recreation and Conservation Grants



Upper Chehalis - Cumulative Grant Funds

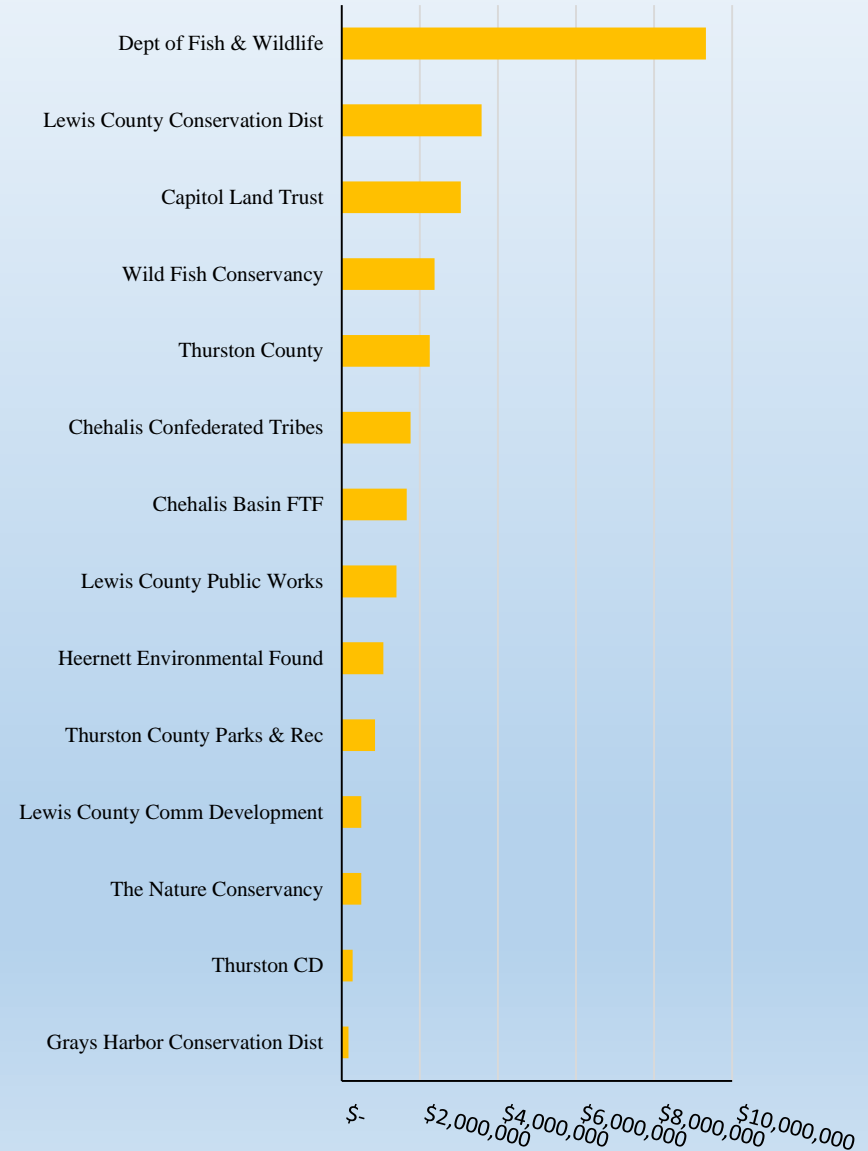


Implementation- Grants and Loans

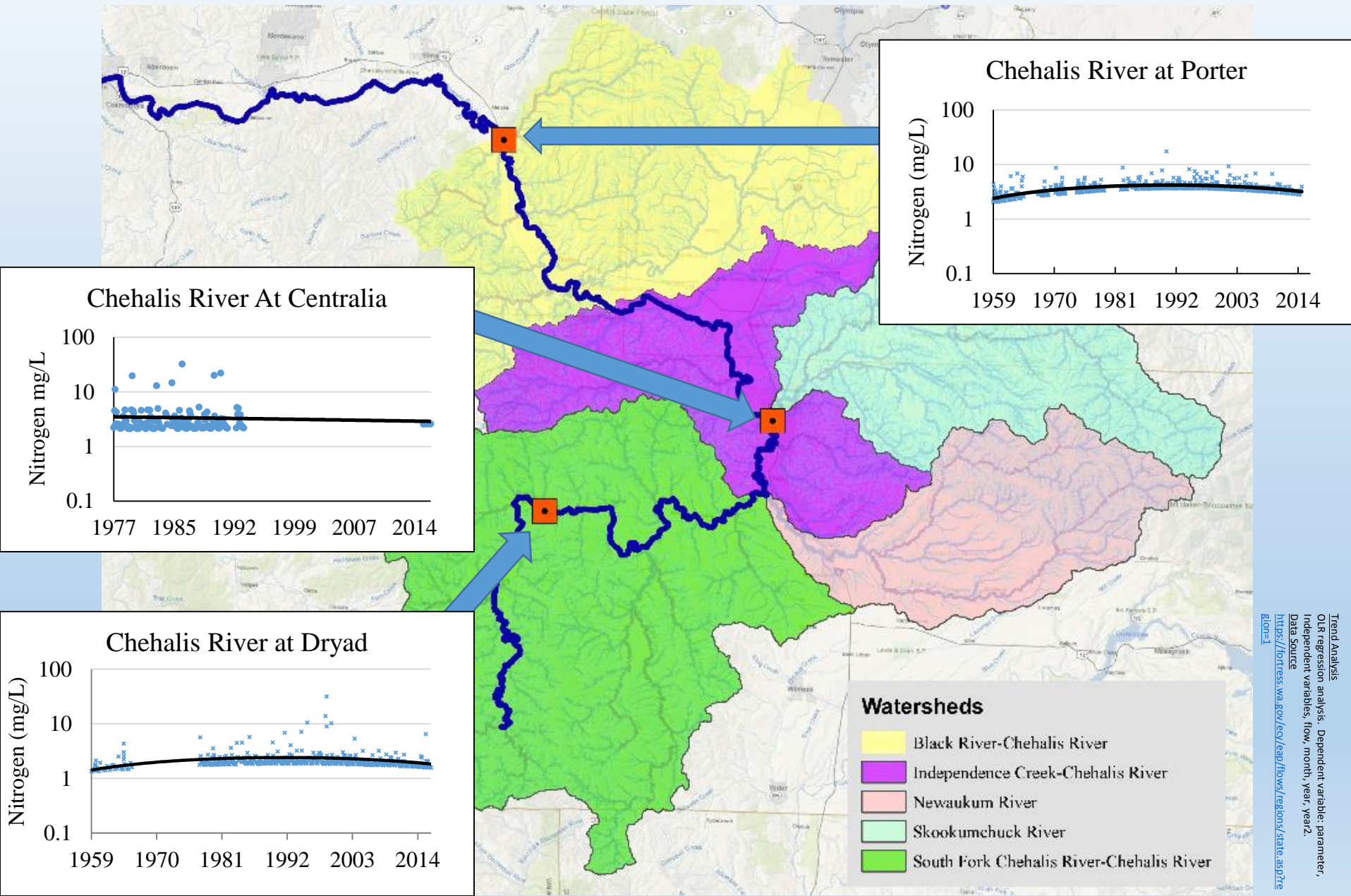
Ecology- Grant Recipients



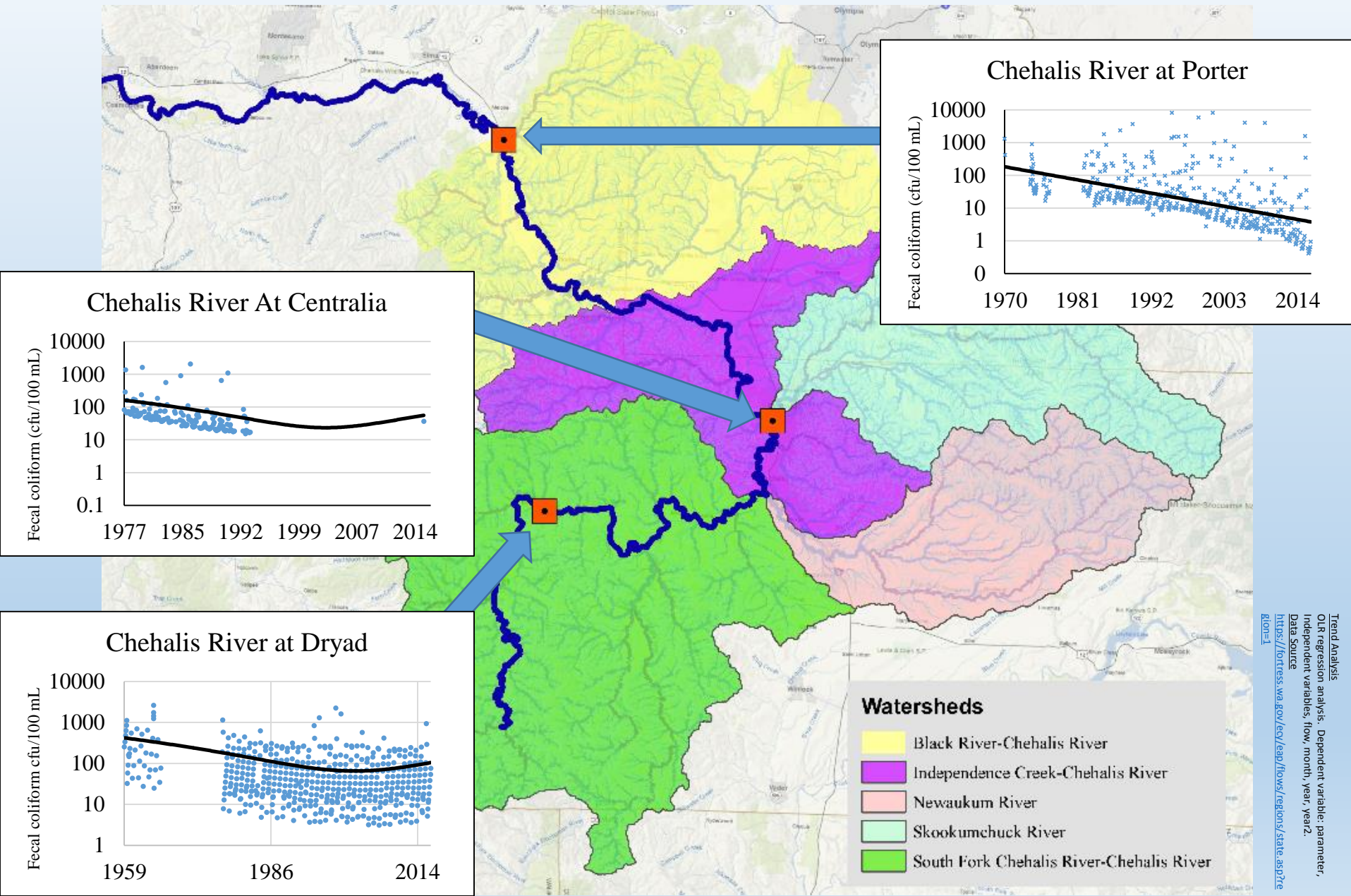
Recreation and Conservation Grants



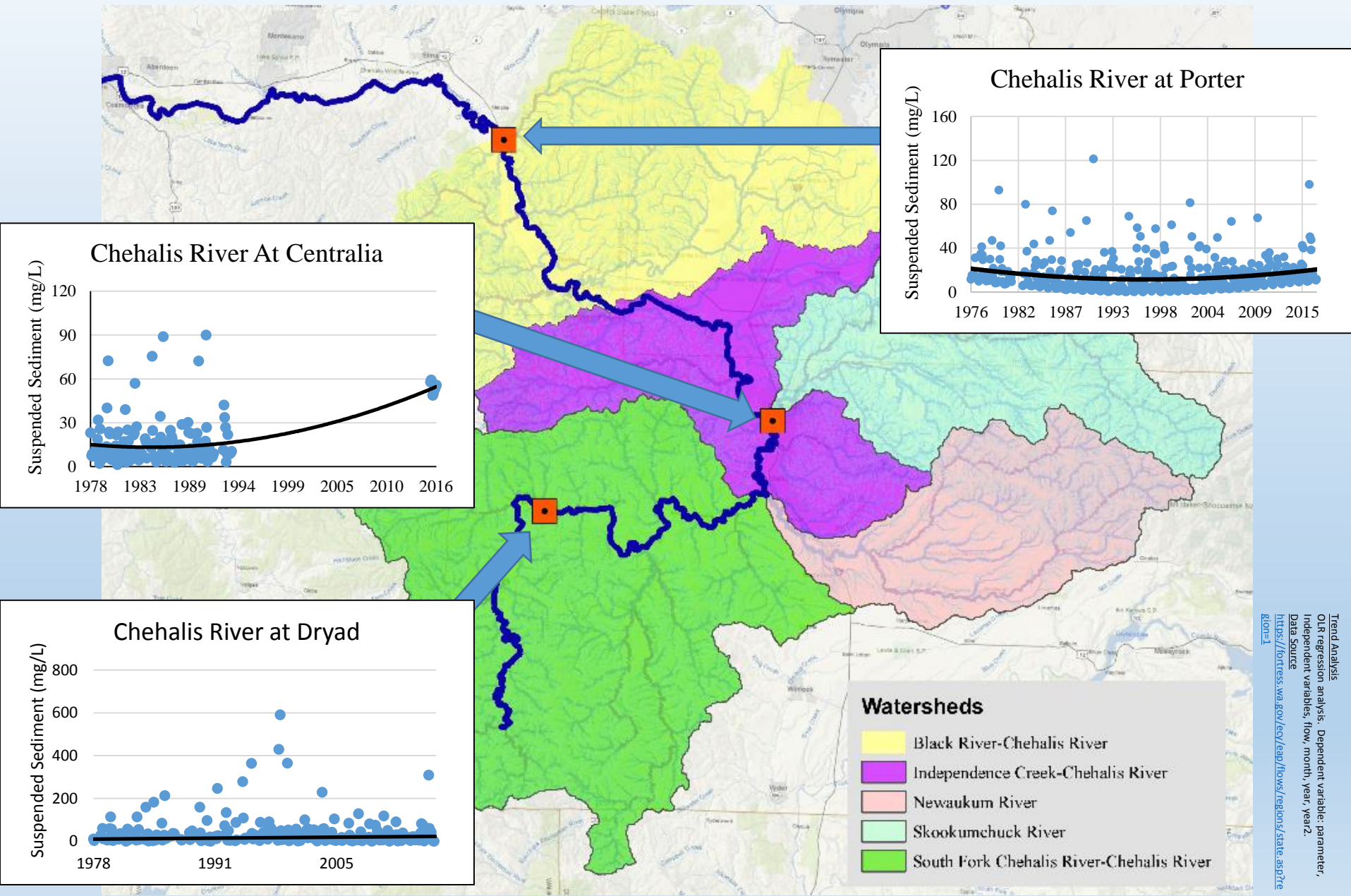
Upper Chehalis – Trends (Nutrients)



Upper Chehalis – Trends (Fecal)



Upper Chehalis – Trends (Sediment)



Summary

Chehalis River Main Stem

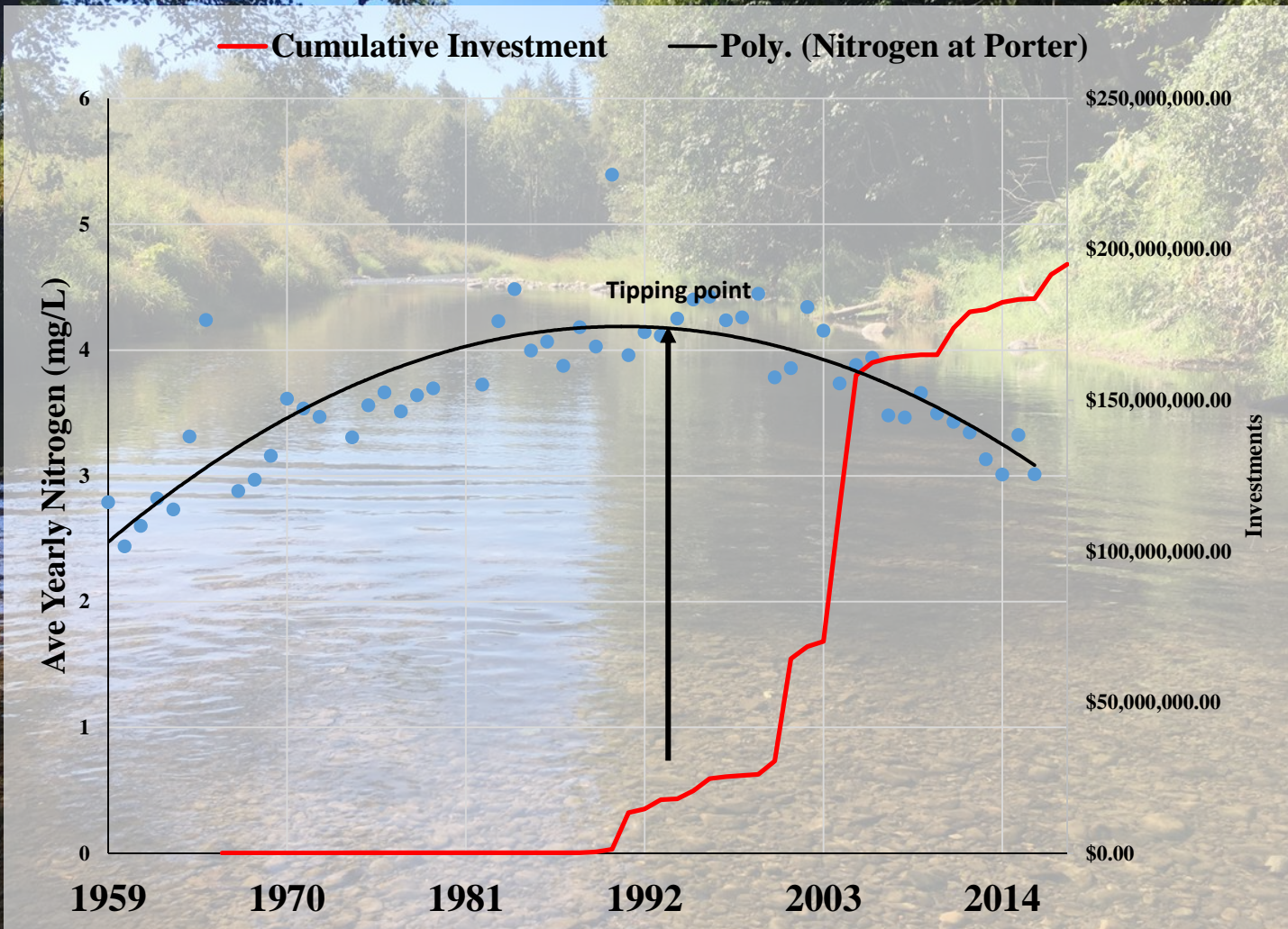
- Nutrients Trending Downward
 - ❖ Not significant, however trends are consistent
- Fecal coliform Trending Downward
 - ❖ > 50 miles of streams delisted
 - ❖ Recent upward trend above Centralia
- Sediment Trending Upwards
- Greatest Investments made in wastewater management, habitat protection, Stormwater and Agriculture projects

Cause and Effect

Difficult to link actions with improvement

- Tracking locations of projects
- Other efforts contributing to improvement
 - ❖ Land use planning/changes
 - ❖ Permits and local ordinances
 - ❖ Other conservation programs (Agricultural)
- Lack of long-term monitoring data
- Scale of monitoring studies
- Monitoring is not holistic

Investment vs Nitrogen



Newaukum River

Newaukum River water quality and habitat improvement projects

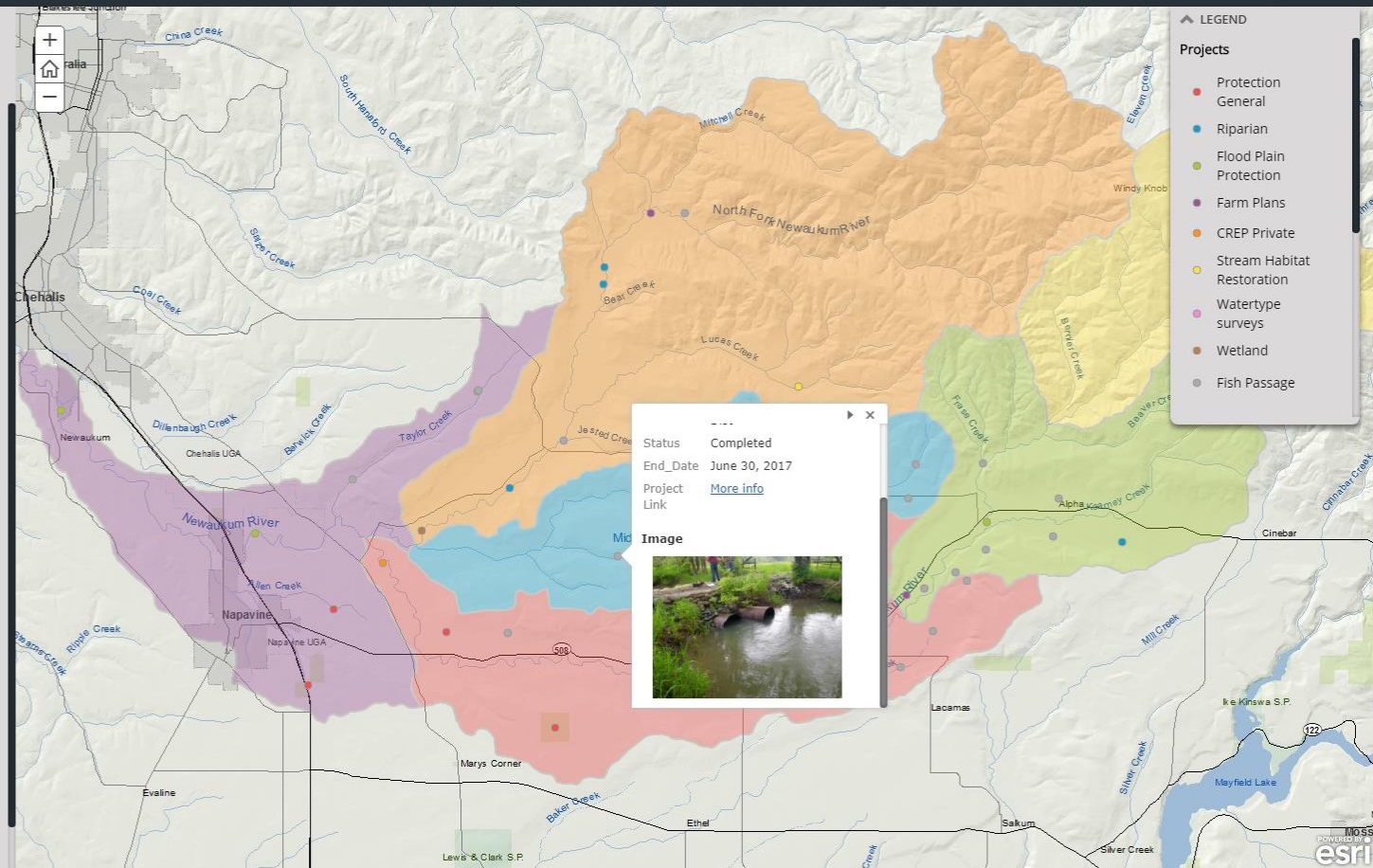
A story map    

Project Map

Click on project locations to learn more about what's being implemented in the Newaukum River watershed to protect, improve or restore stream habitat and water quality.

Although this list includes much of the implementation work in the watershed, it does not account for all projects. Lewis County and the Washington Department of Transportation (WDOT) support capital improvement projects likewise, the [Lewis County Conservation District](#) together with the [Natural Resources Conservation Service](#) and other state and federal agencies provide assistance to agricultural operations to protect water quality, and these are not factored into this assessment.

Project data for activities implemented within the Newaukum River watershed area were obtained from three sources; [Ecology's Water Quality Program \(WQP\)](#), [Habitat Work Schedule](#), and [Prism](#). Programs supporting these data sources have provided grants and loans to recipients in excess of 2.3 million dollars to implement pollution prevention and restoration projects in the watershed since 1990.



Questions?

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