



**Local Monitoring Can Yield
Big Dividends In Evaluating
Program Effectiveness**

MuniCon 2017
Yakima, WA

From: Scott Collyard (ECY)
Sent: Tuesday, December 15, 2015
To: Larry Schaffner
Subject: Thurston County

Hi Larry,

I work for Ecology's Environmental Assessment Program and I am the project manager for the *Henderson Inlet fecal coliform TMDL effectiveness monitoring project* **We completed sampling for the project . . . and I am starting to look at the data** The work is just primary but I would be happy share or collaborate more about the project.

My goal right now is the put together the most complete GIS map I can. Anything you could do to add to this would be very helpful

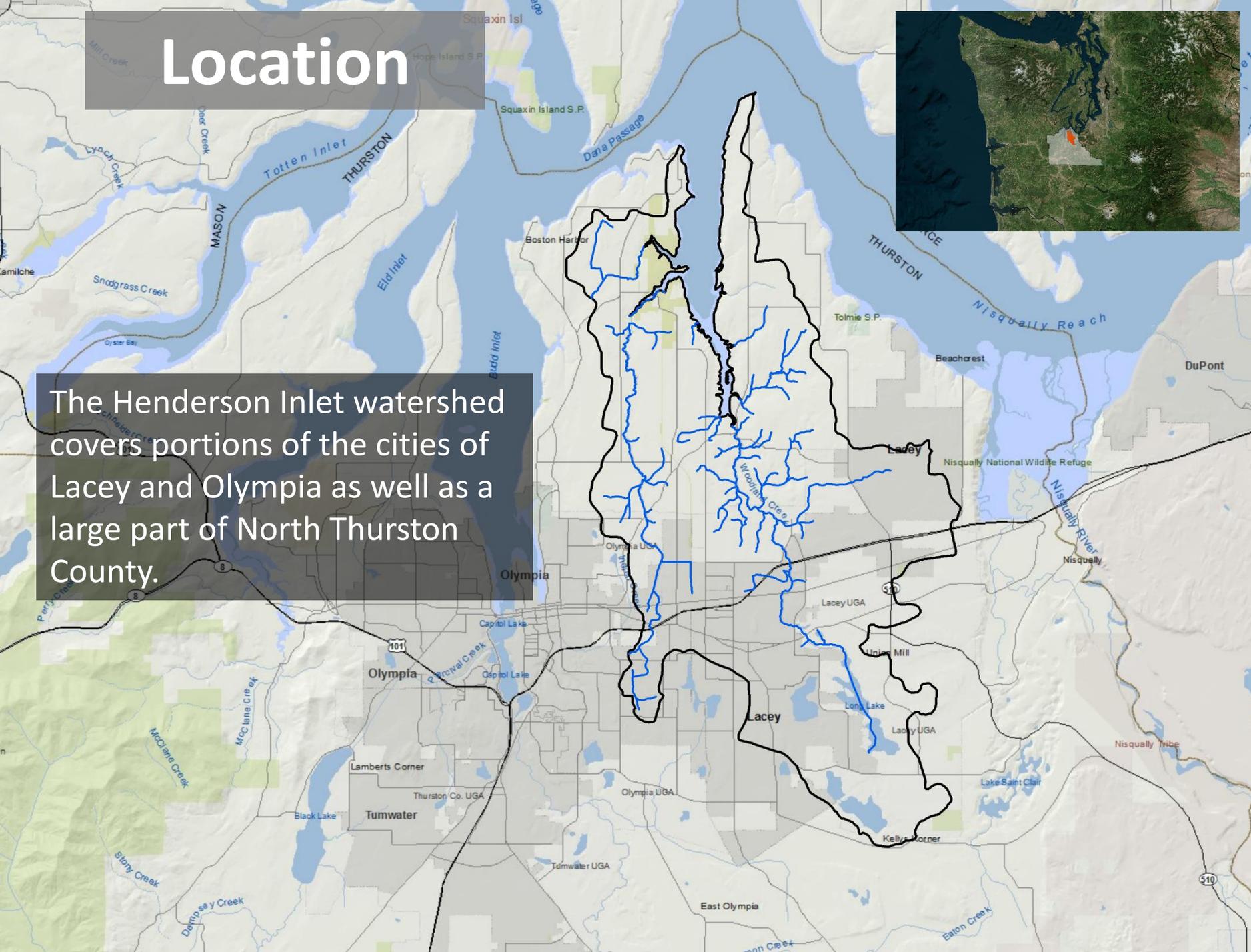
Thanks!

Scott

**Scott Collyard
Natural Resource Scientist 3
Washington State Department of Ecology
Environmental Assessment Program**

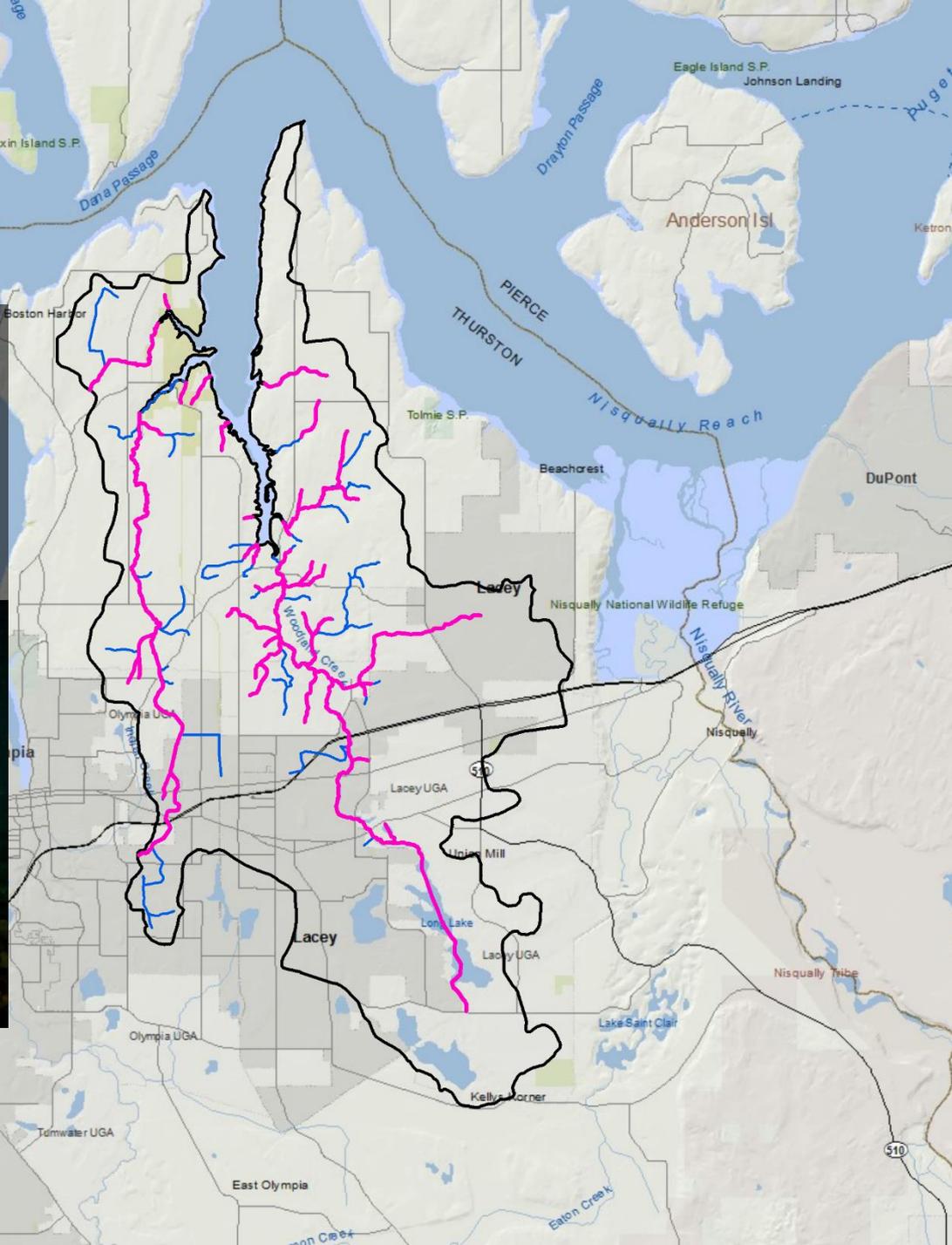
Location

The Henderson Inlet watershed covers portions of the cities of Lacey and Olympia as well as a large part of North Thurston County.



Resources

Streams within the watersheds are a rare example of an urbanized creeks that still supports several species of salmon.



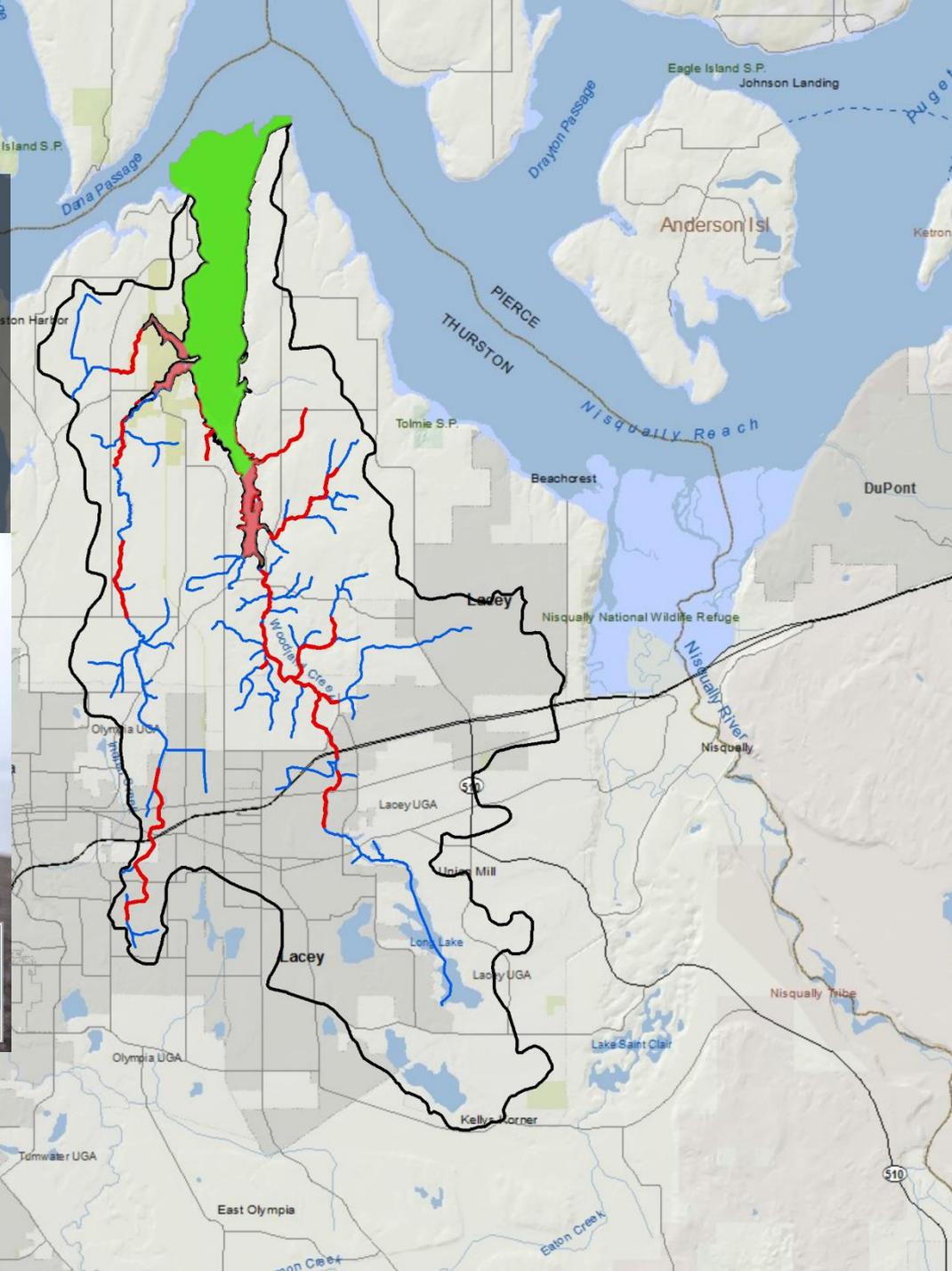
Resources

Henderson Inlet is a productive shellfish harvesting area.



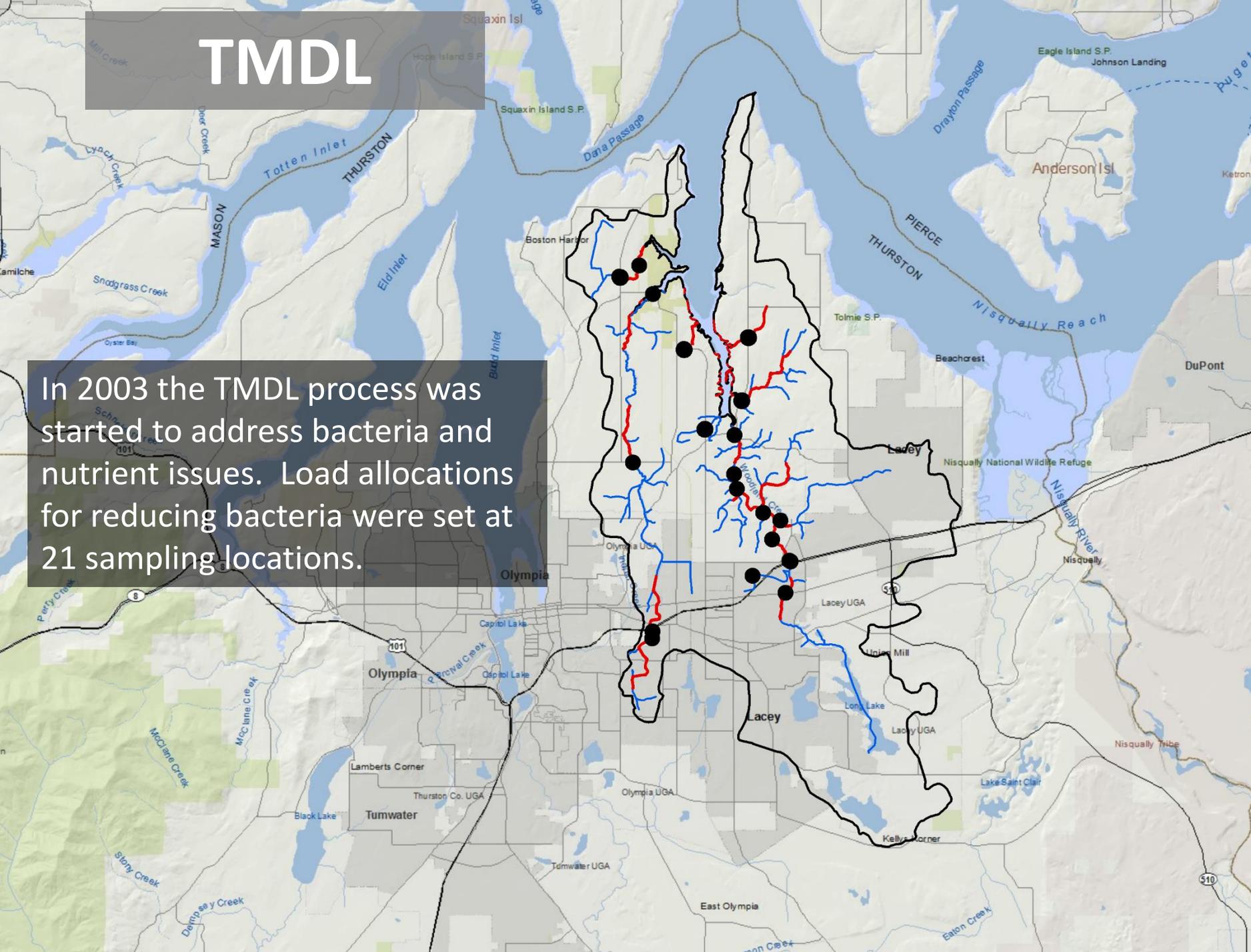
PROBLEM

In response to downgrades of ~600 acres of shellfish harvest areas between 1984 and 2000, surface waters flowing into the Inlet were placed on the 303(d) list for bacteria.



TMDL

In 2003 the TMDL process was started to address bacteria and nutrient issues. Load allocations for reducing bacteria were set at 21 sampling locations.

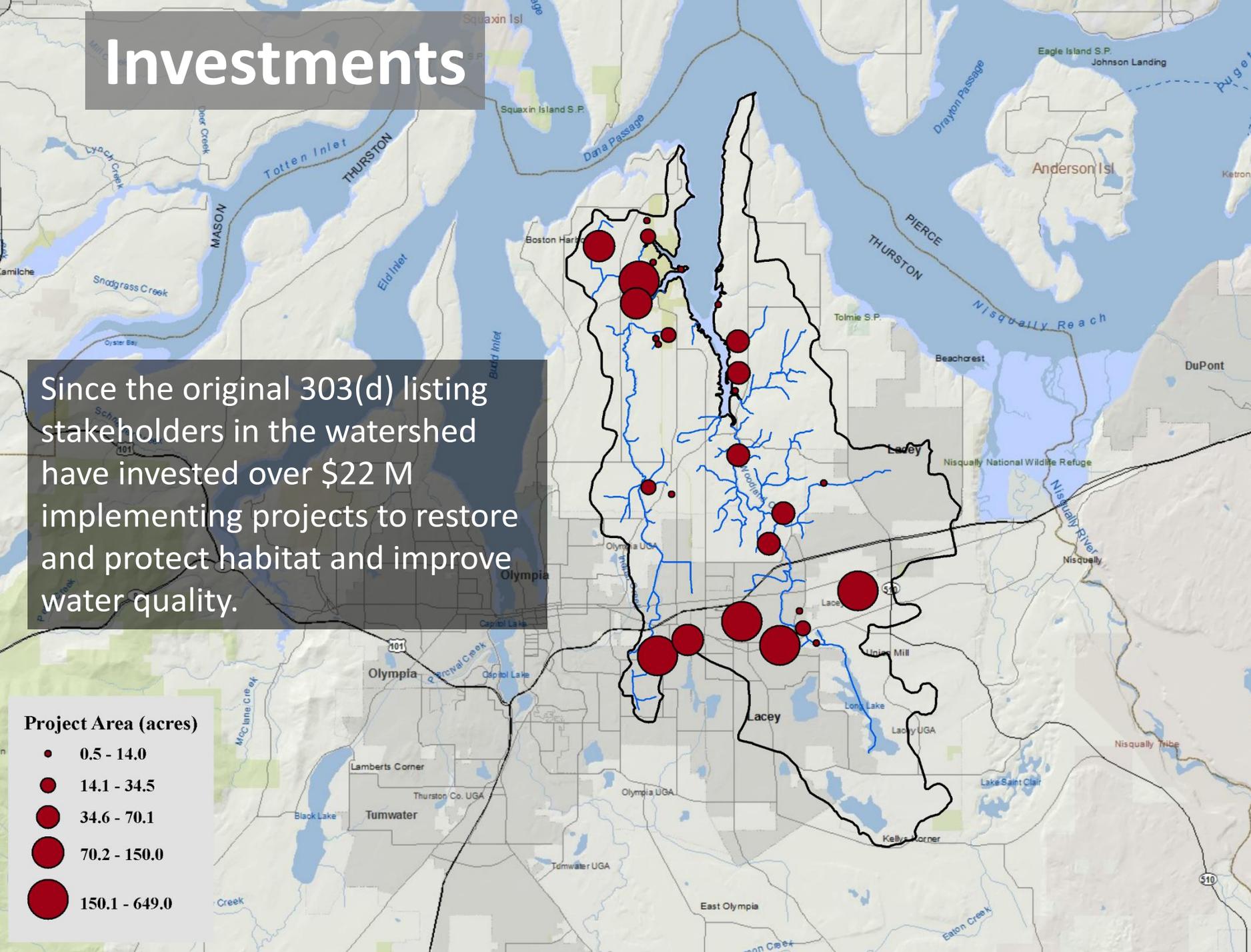


Investments

Since the original 303(d) listing stakeholders in the watershed have invested over \$22 M implementing projects to restore and protect habitat and improve water quality.

Project Area (acres)

- 0.5 - 14.0
- 14.1 - 34.5
- 34.6 - 70.1
- 70.2 - 150.0
- 150.1 - 649.0

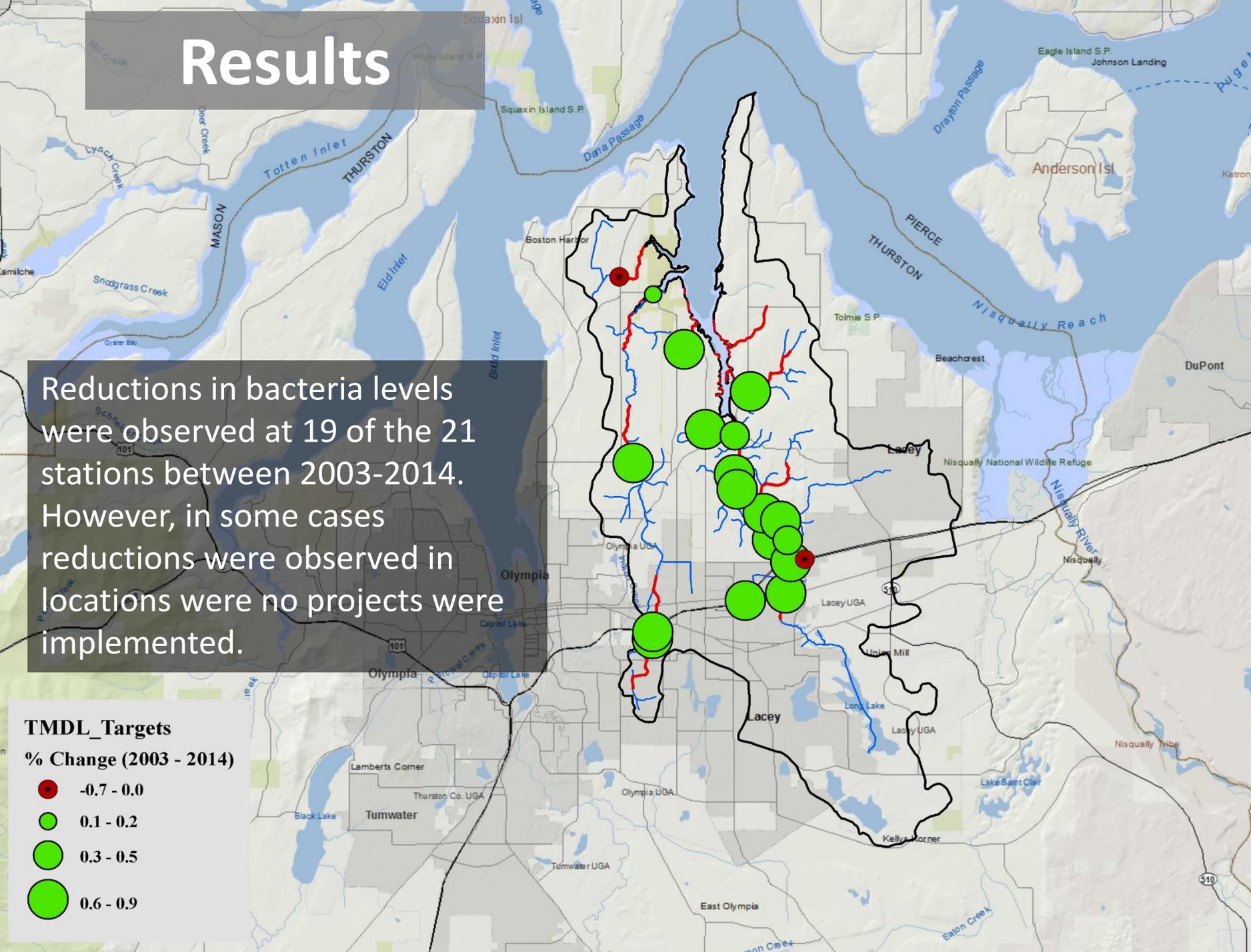
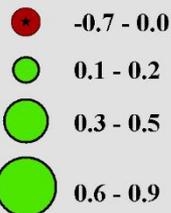


Results

Reductions in bacteria levels were observed at 19 of the 21 stations between 2003-2014. However, in some cases reductions were observed in locations where no projects were implemented.

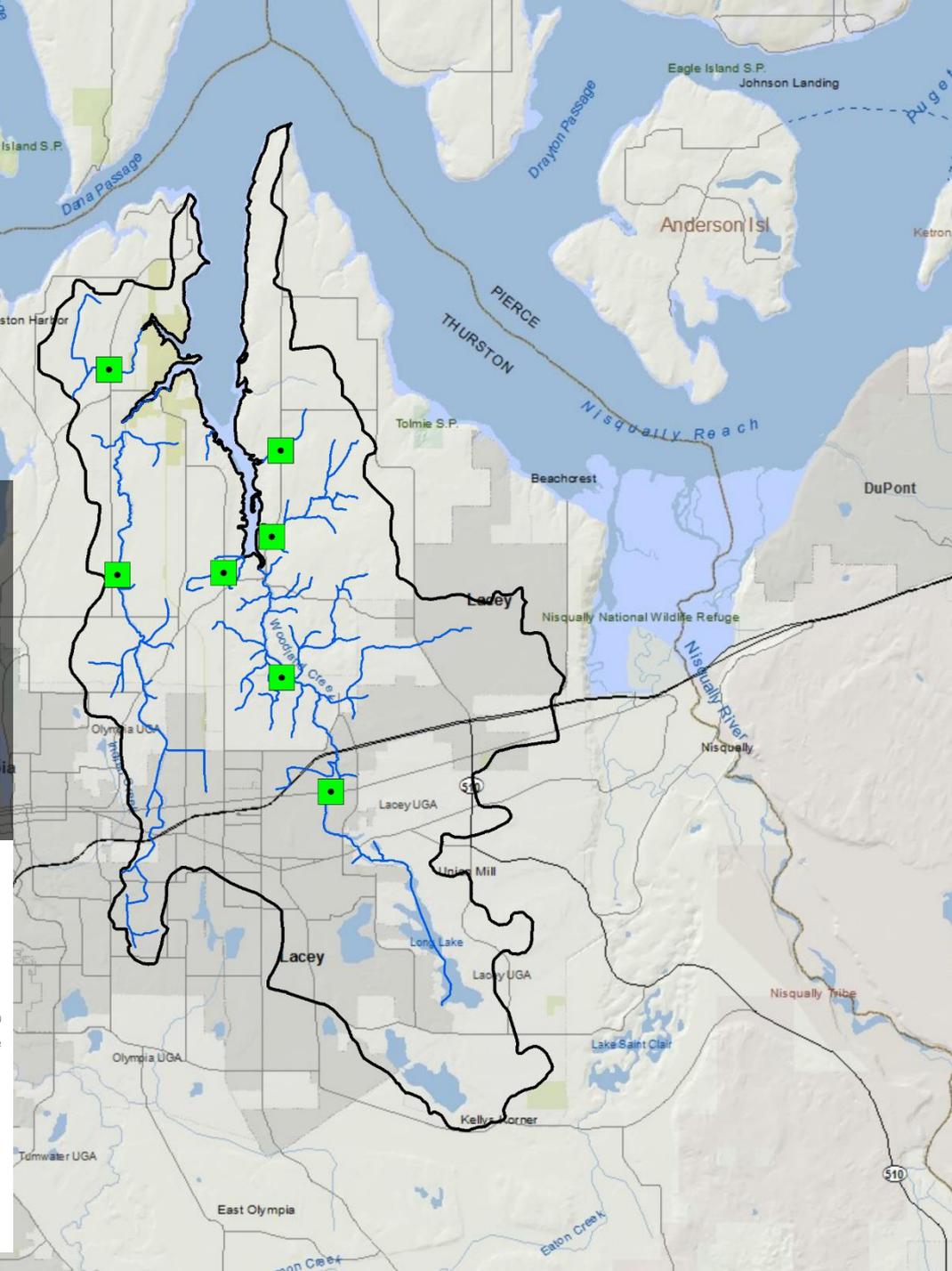
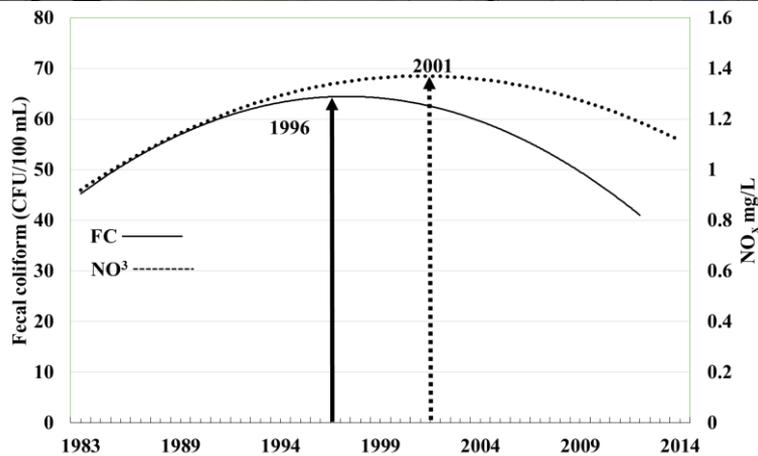
TMDL_Targets

% Change (2003 - 2014)



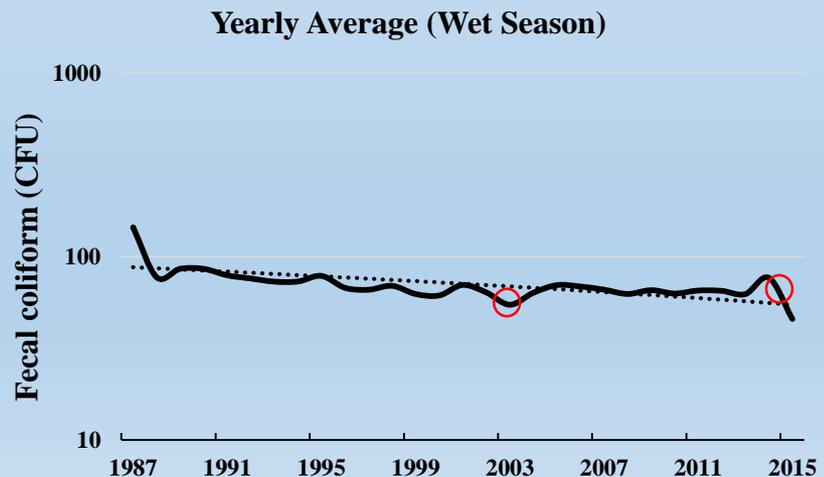
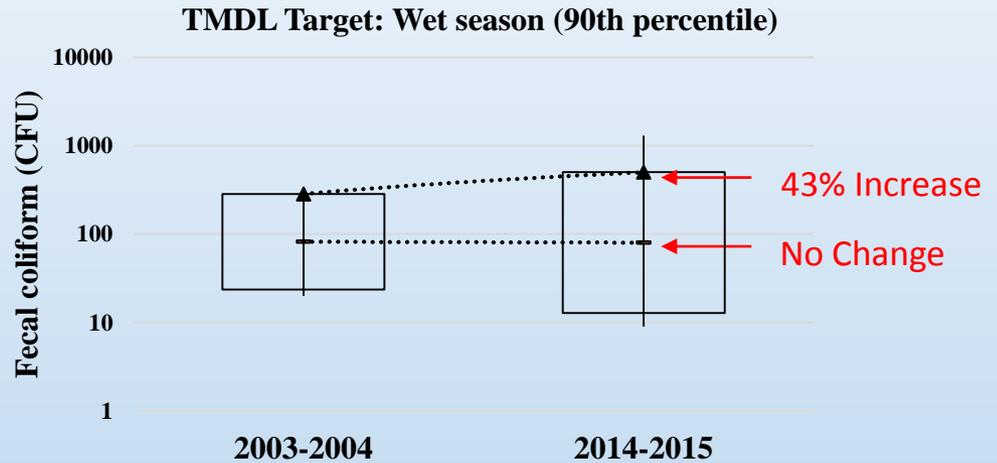
Results

Thurston County's long-term ambient monitoring data was used to assess trends over time. This data help establish timeline between investments and water quality improvement.



Before/After vs. Trends Example

Before and after snapshot over a ten year period vs. long-term data allowed for comparison between approaches.



Was it effective?

TMDL WQ Cleanup Plan

- 72% of actions implemented
- Project funding ↑ 77%
- Major sources of corrected
- Bacteria & nutrients ↓

Stormwater Projects

- Fewer discharges from outfalls
- Instream declines below stormwater retrofits

Was it effective?

Septic to sewer project

- 150,000 gals. septic water/day removed
- Bacteria & nitrogen declines instream post project

Planning

- TMDL & County data used to develop model to rank potential infrastructure projects

Septic programs

- Unknown

Education and outreach

- Difficult to link to water quality

Agricultural BMPs

- Maybe

Among the Draft's Conclusions & Recommendations . . .

Conclusion:

Long-term monthly . . . data collected by Thurston County's monitoring programs were essential for supporting conclusions made in this assessment.

Recommendation:

Recommend continuing Thurston County's long-term . . . monitoring program

Thurston Co. Monitoring Partnership

Established in 1991

Funded in partnership with the cities of Lacey, Olympia, and Tumwater with the mission to:

Assess the health of regional water resources to allow decision makers to develop programs, policies, and capital facility plans to protect those resources for beneficial uses in perpetuity.



Program Elements

- Monitoring:
 - Stream flow
 - Precipitation
 - Lake & groundwater levels
 - Ambient water quality
 - Macroinvertebrate
 - Special projects
- Quality assurance & control
- Data management
- Reporting
- Program administration



Uses

- Land use & watershed planning
- Policy development
- Adaptive management
- Target stormwater & water quality policies, programs, & projects
- Evaluate effectiveness
 - Basin level
 - Project level
- Evaluate trends
 - Water quality
 - Hydrologic changes in streams
 - Biological health



Local Funding Impact of the 2012 Permit's Monitoring Requirement

Local Partnership's Interlocal monitoring agreement's annual budget over time:

- \$ 79,400 ('91 *Beginning*)
- \$176,000 ('07-'10 *Peak*)
- \$169,000 ('11-'14) ← *August 15, 2014 – First payment due to Ecology to fund RSMP implementation*
- \$ 95,000 ('15-'18 *Low*)

Payments to Fulfill the 2012 Permit Monitoring Requirements

Paid Annually into the RSMP Collective

Jurisdiction	Status & Trends	Effectiveness	Source Identification	TOTAL
Thurston Co.	\$12,841	\$21,395	\$1,984	\$36,220
Lacey	\$9,799	\$16,326	\$1,514	\$27,639
Olympia	\$11,110	\$18,511	\$1,717	\$31,338
Tumwater	\$4,095	\$6,823	\$633	\$11,551
Total	\$37,845	\$63,055	\$5,848	\$106,748

Programmatic Impact of the 2012 Permit's Monitoring Requirement

Local programmatic impact of the 2012 Permit's monitoring requirement:

- Destabilization of Partnership's funding:
 - 44 percent reduction from previous monitoring budget
 - Questions regarding program's long-term viability
- Reduction in monitoring stations
- Elimination of macroinvertebrate monitoring & special projects
- Annual reporting ⇒ biennial reporting
- Break in continuous long-term data record

Looking Forward

We need to support local monitoring efforts to succeed

In evaluating effectiveness - it's a matter of scale:

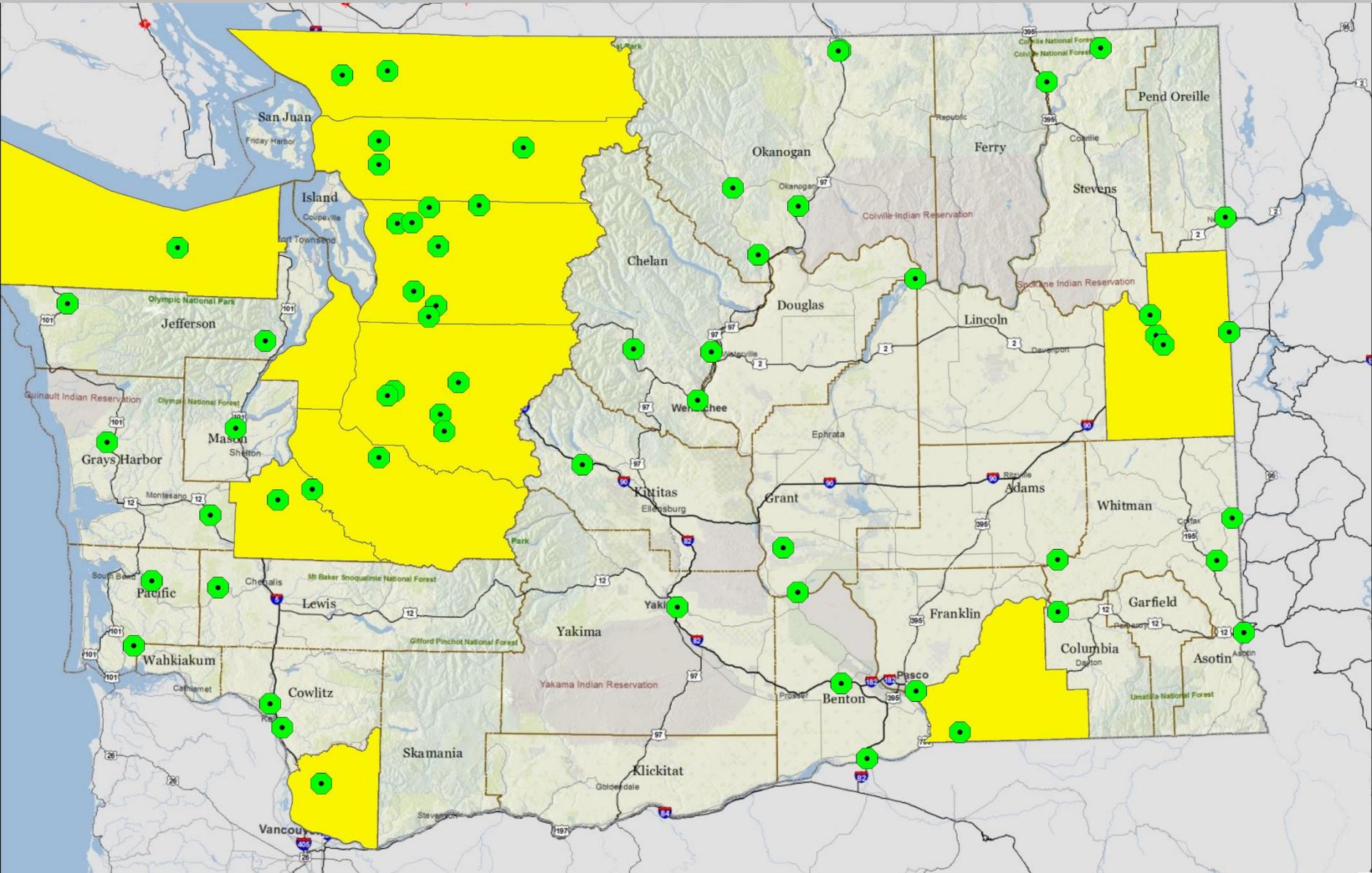
- Monitoring in closer proximity to the action improves ability to detect responses
- Creating feedback loops are easier to achieve (and faster) at smaller geographic scales
- Integration of status & trends, effectiveness, and source i.d. monitoring can be accomplish at smaller geographic scales

Looking Forward

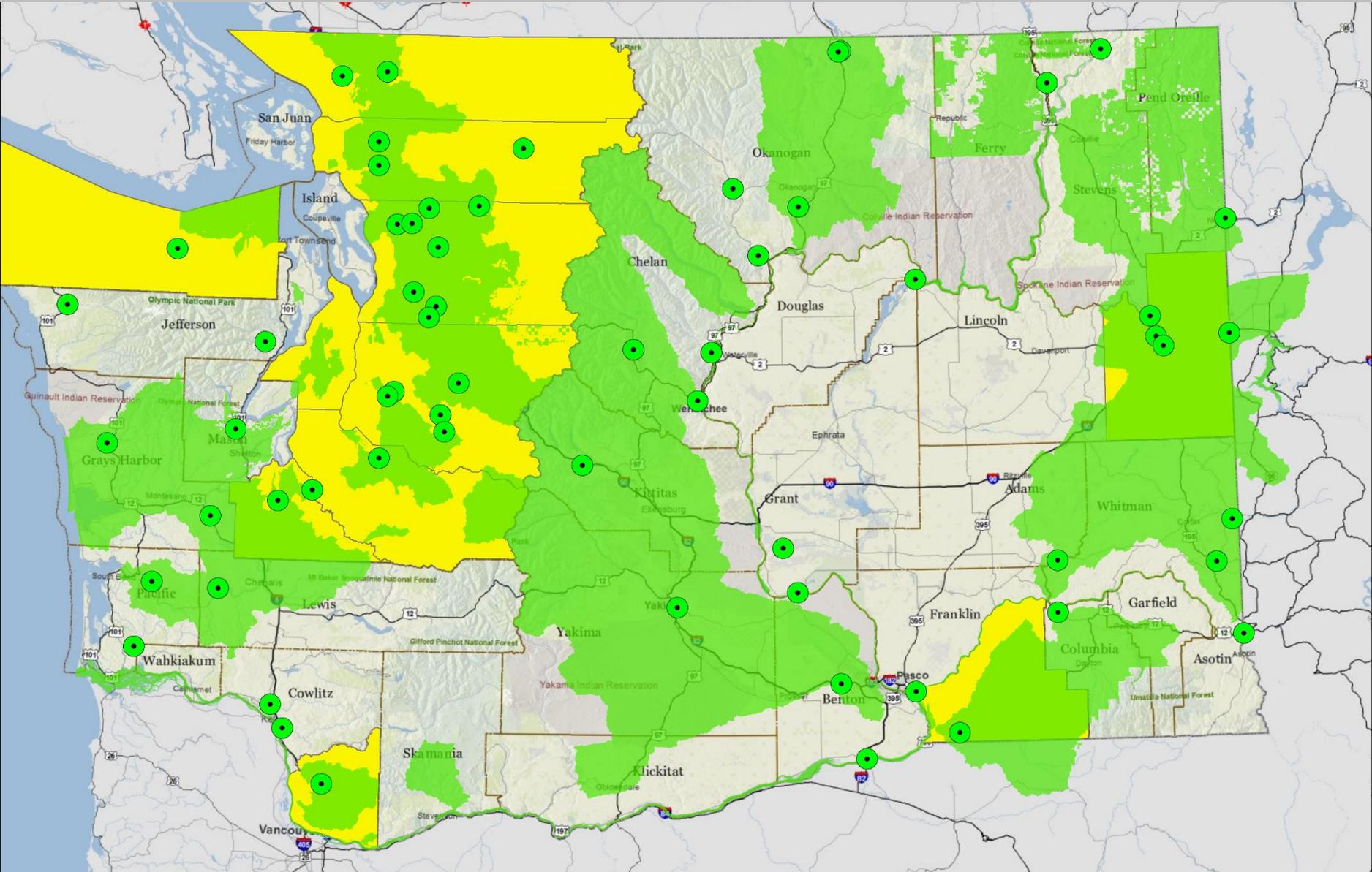
Local & larger basin scale monitoring objectives do not need to be mutually exclusive:

- If structured thoughtfully, local efforts can:
 - Roll up to the larger basin scale
 - Supplement EAP's statewide long-term fix monitoring stations
 - Integrate status & trends, source tracing, and effectiveness assessments
- The 2018 reissued municipal permit can be structured to foster this synergy

County's with Monitoring Programs



TMDL Areas



Thank You Very Much for Your Attention!

*I love a finished speaker, I really, truly do.
I don't mean one who's polished.
I just mean one who's through.*

- Richard Armour, American Poet

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