

Water Year 16 (October 2021- September 2022)

Island County Surface Water Quality Report



Island County Public Health
Division of Natural Resources
Surface Water Quality Monitoring Program

Sage Ince, Water Quality Specialist
s.ince@islandcountywa.gov

Carlie Miller, Water Quality Specialist
cj.miller@islandcountywa.gov

Clea Barenburg, Watershed Planner
c.barenburg@islandcountywa.gov



Surface Water Quality Monitoring

Goal: Protect human health and critical areas by monitoring water quality

Achieved by:

Baseline monitoring and source identification work

Using data to:

- Characterize waters
- Identify water quality trends over time
- Identify emerging problems
- Determine the effectiveness of pollution control programs
- Help direct pollution control efforts to where they are most needed

Natural Resources

Natural Resources supports ecosystems and biodiversity across Island County. The division works to conserve and restore forests, streams, shorelines, wetlands, and wildlife habitats for the benefit of current and future generations.

► 87k

Island
County
Population

► 72%

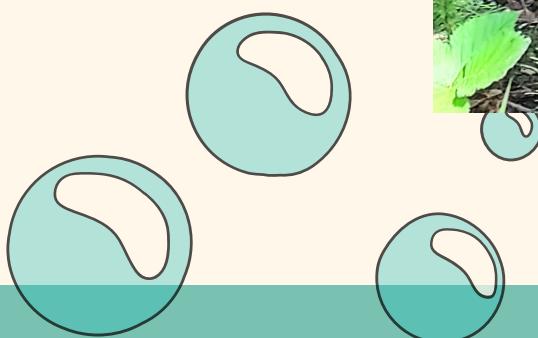
On Septic
Systems

► 15

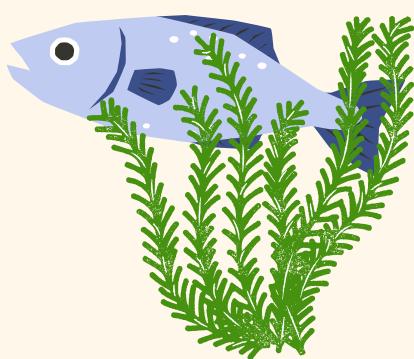
Monitored
Watersheds

► 13

Source ID
Investigations

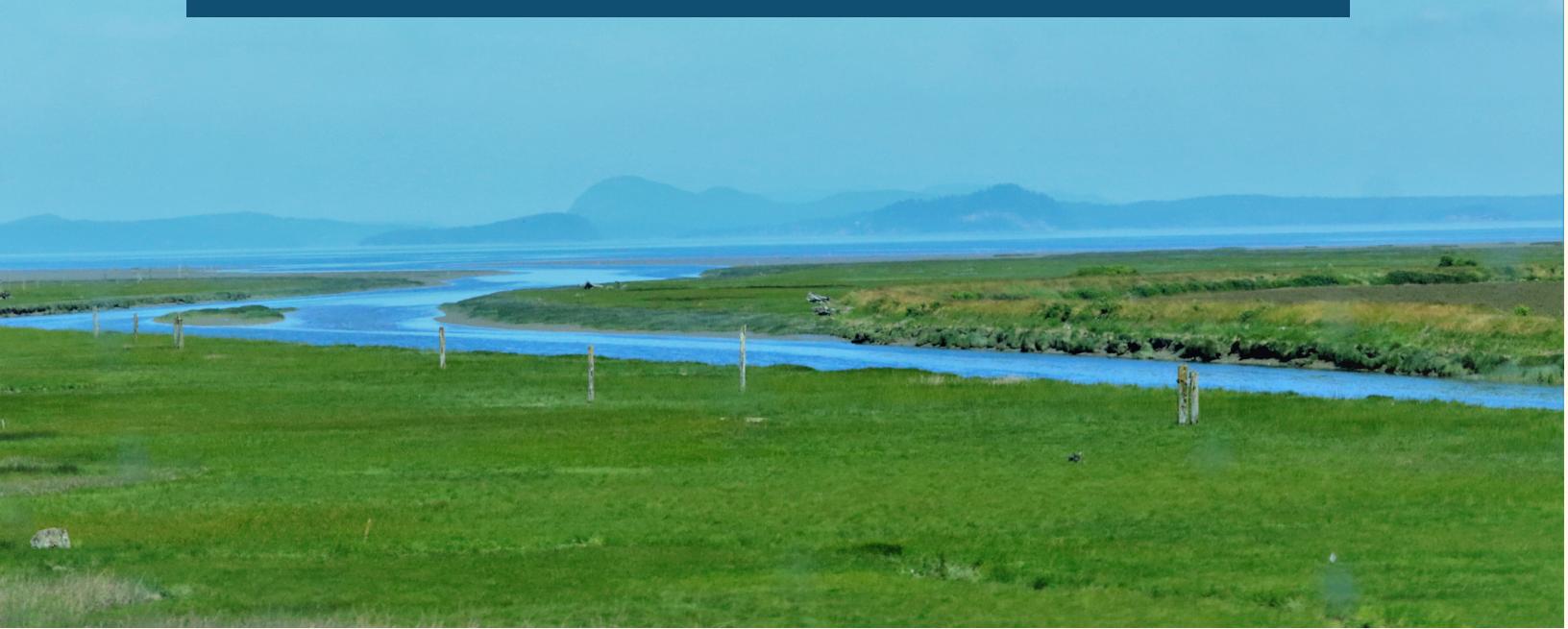


WRIA 6



- Encompasses all of Island County
- 213 miles of shoreline
- 30.3 miles of fish-bearing streams
- Critical rearing/resting areas for juvenile salmon
- Chinook, bull trout, and Hood Canal summer chum

Importance of Water Quality



Island County is host to numerous natural resources, including but not limited to:

- ◆ **Shellfish Growing Areas**
- ◆ **Groundwater Recharging Areas**
- ◆ **Salmonid Habitat**
- ◆ **Pocket Estuaries**
- ◆ **Wildlife Refuges**
- ◆ **Public Lakes**
- ◆ **State and County Parks**
- ◆ **Public Swim Beaches**

In This Report

- Core Monitoring Sites
- Reconnaissance Monitoring Sites
- Effectiveness Monitoring Sites
- Source Identification Monitoring
- Sample Sites
- Water Standards Results
- Next Steps



Monitoring

During Water Year 16:

- Each sample site was sampled once per month except when surface flow was not present or when additional samples were required.
- Each site was assessed for:
 - ▶ temperature
 - ▶ pH
 - ▶ conductivity
 - ▶ dissolved oxygen
 - ▶ turbidity
 - ▶ E. coli bacteria
 - ▶ flow metrics



Core Sites



Core sampling in Island County monitors local trends and seasonal patterns. Established in 2006, core points were chosen to monitor areas in either developed, agricultural or natural land uses.

Camano Island

Whidbey Island

Carp Creek

Crescent Creek

Maxwelton Creek

Chapman Creek

Ebey's Reserve

Scatchet Head Community

Cavalero Creek

Freeland Park

Glendale Creek

Kristoferson Creek

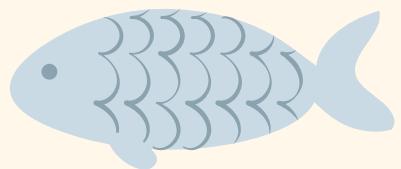
Freeland Marsh



Rotational Sites



Rotational sites on three-year cycles were chosen and randomly ordered and grouped to ensure that locations were spread across areas, and that over time the sites would rotate between regions.



Camano Island

Whidbey Island

Brokaw at Rocky
Point

Cross Creek

Holmes Harbor

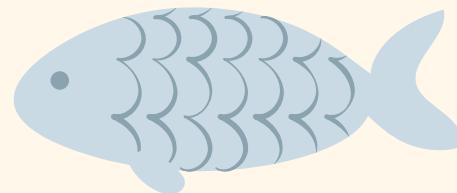
South Camano



Recon Sites



Reconnaissance monitoring is conducted in areas based on risk of degradation of valuable resources. These resources include anadromous fish habitat, pocket estuaries, wetlands, swim-beaches, and shellfish beds.



Camano Island

Whidbey Island

English Boom

Double Bluff Beach

Maxwelton Beach

Cama Beach

Race Road

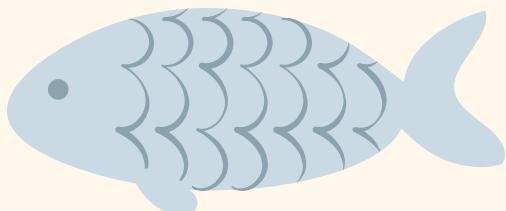
Outdoor Classroom



Effectiveness Sites



Effectiveness monitoring is conducted to evaluate the impact of infrastructure modifications on water quality.



Camano Island



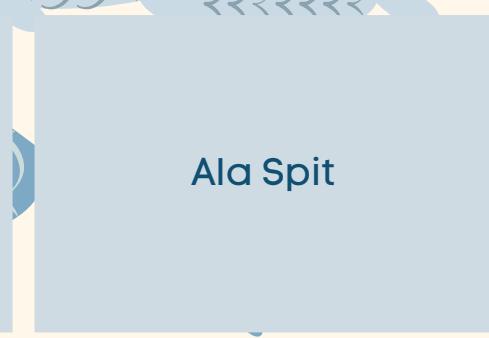
Whidbey Island



Kristoferson Creek
(Upstream and
Downstream)



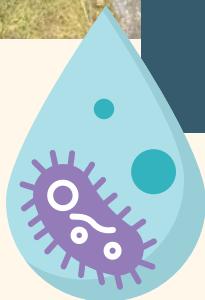
Cornet Bay



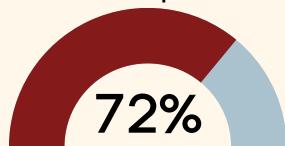
Ala Spit



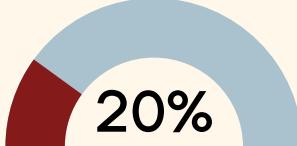
Source ID Investigations



Island County Residents
on Septic



National Residents
on Septic



VS.



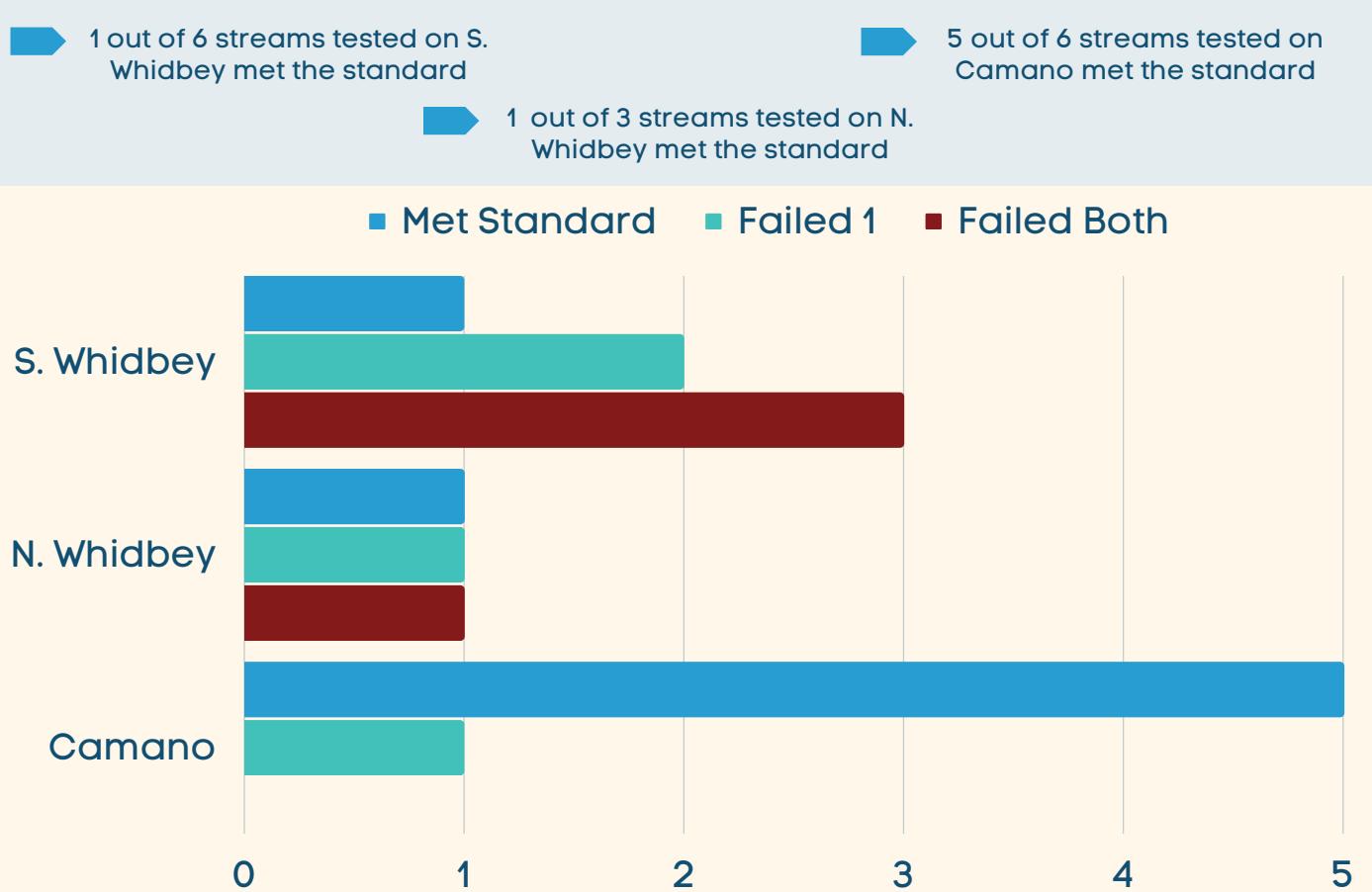
Source identification (Source ID) water quality monitoring is initiated when areas have repeated exceedances of water quality standards for E. coli. Source ID narrows down possible sources of pollution through:

- Monitoring intensification
 - Increasing the number and locations of monitoring points upstream and downstream
 - Increasing the frequency and/or timing of monitoring at the original sample point
 - Microbial Source tracking using methods such as dye testing
- Identifying impaired waterbodies and working with Island County's onsite septic program and planning departments



Water Standards

The Department of Ecology sets standards for surface water quality for E. coli. Here's how streams in the county stack up:

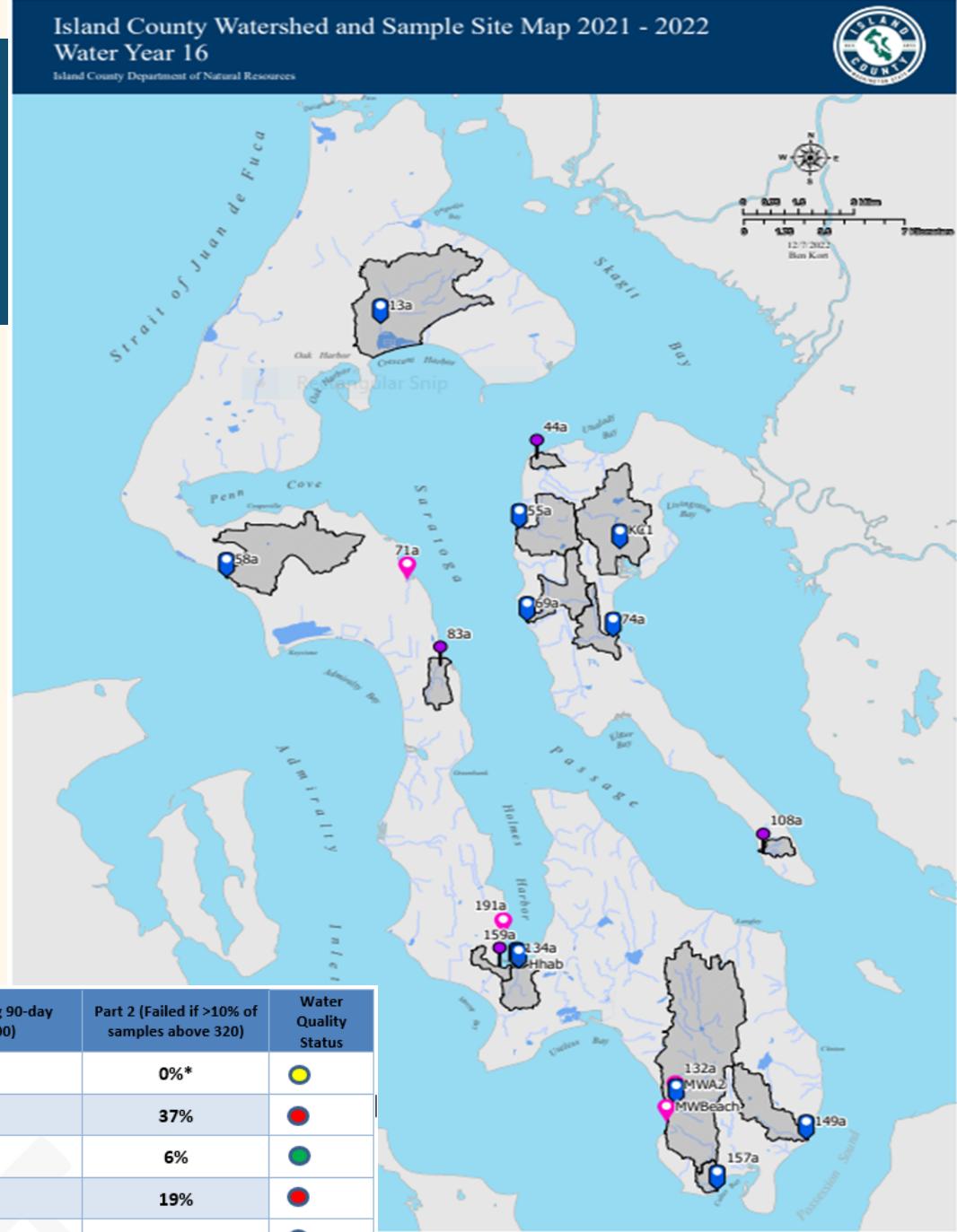


- There are two parts to the Water Quality Standard:
- Part 1: Annual Geometric Value (GMV) <100 E. coli per 100 mL
- Part 2: Not more than 10% of all samples collected for calculating geometric mean >320 E. coli/100 mL



Sample Sites

Seven of the fifteen Island County streams sampled in WY16 met the Washington State Water Quality Standard. Four streams met one part of the standard, while four streams failed both parts of the standard and were categorized as failing. Failing streams were investigated and referred to Source ID and the Adaptive Management Action Team (AMAT).



Above: Sample sites for Water Year 16 in Island County

Left: Sample site list with standards met/failed per site

*Low numbers of samples



Conclusion

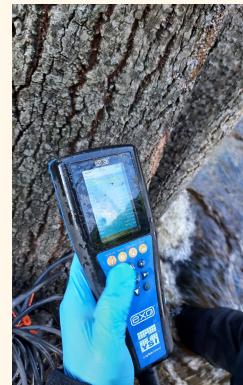
WRIA 6 is unusual in that it lies solely within the boundaries of one county and contains no large river system.



This unique habitat has led to a lack of understanding on the importance of seasonal streams and critical areas that are not visually full of water all of the year.



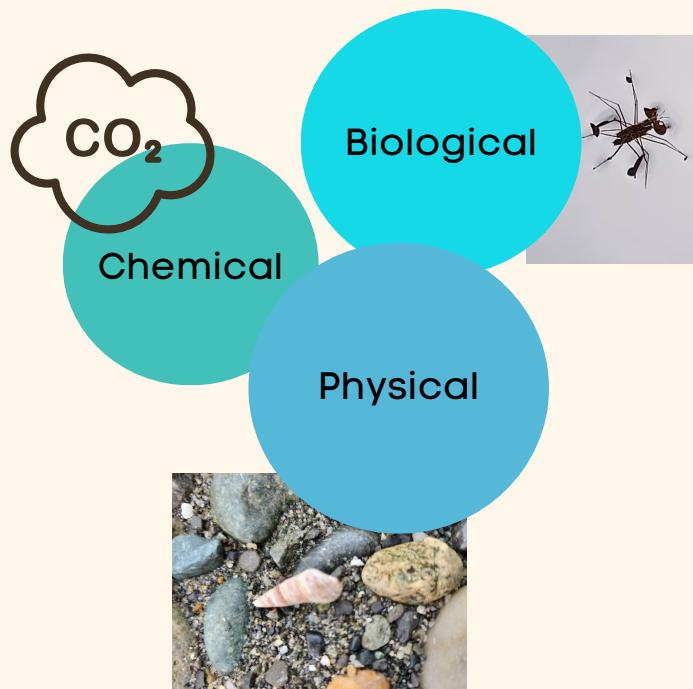
Because of the nature of our seasonal streams, and how fish and other species use them, there must be a constant update of information all aspects of water quality.



Next Steps

- Increase number of watersheds sampled
- Comprehensive stream assessments
- Expand stream health monitoring to include more parameters such as:
 - Benthic organisms
 - Soil composition
 - Heavy metals concentration
- Riparian buffer monitoring

Stream Health Composition Metrics:



Thank you!

For the comprehensive details on water quality monitoring in water year 16, check out the full report on our website.

Island County
Natural Resources
Surface Water Quality

Visit us at <https://www.islandcountywa.gov/>