

# 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

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# Surface Water Quality Monitoring

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

Achieved by:

Baseline monitoring and source identification work

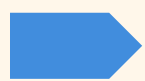
Using data to:

- 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



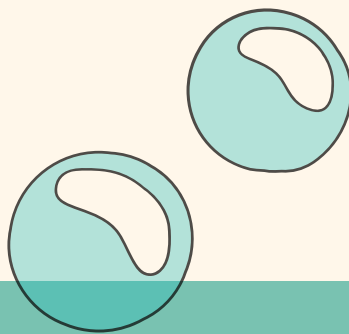
15

Monitored  
Watersheds




13

Source ID  
Investigations

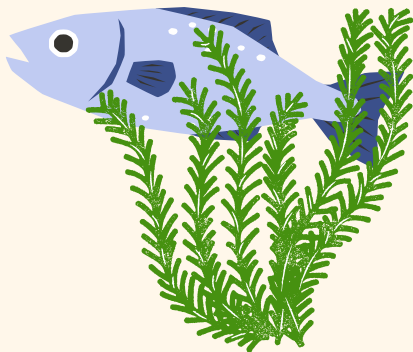




# WRIA 6



## Water Resource Inventory Area (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



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

Carp Creek

Chapman Creek

Cavalero Creek

Kristoferson Creek

## Whidbey Island

Crescent Creek

Ebey's Reserve

Freeland Park

Freeland Marsh

Maxwelton Creek

Scatchet Head  
Community

Glendale Creek





# 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

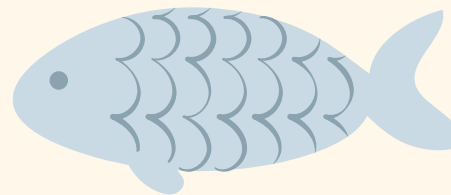
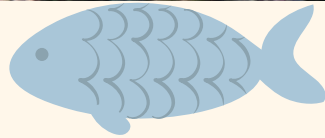




# Recon Sites



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)

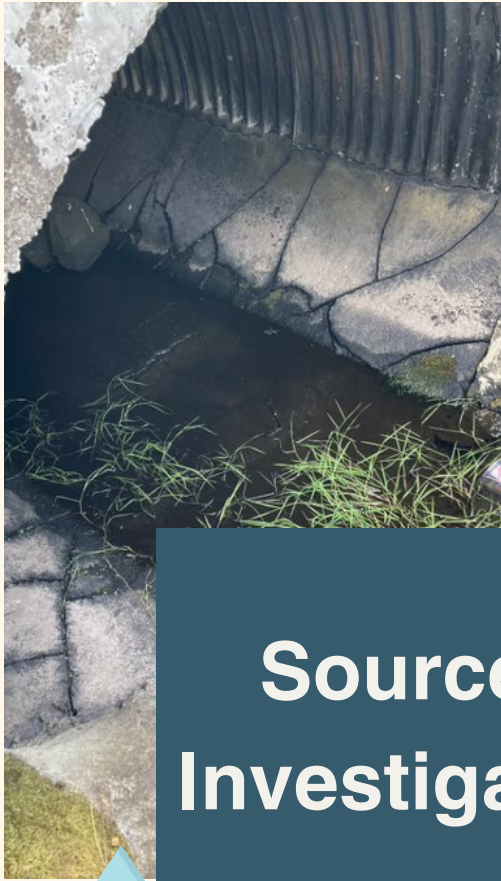


Cornet Bay

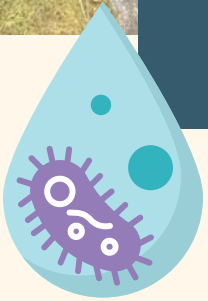


Ala Spit



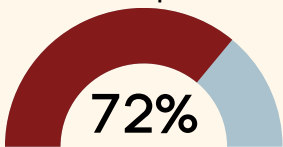


# Source ID Investigations



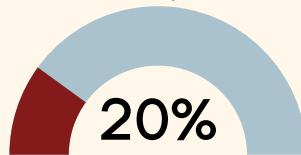
Source identification (Source ID) water quality monitoring is initiated when areas have repeated exceedances of water quality standards for E. coli. Source ID narrows down possible sources of pollution through:

Island County Residents  
on Septic



**vs.**

National Residents  
on Septic



- 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





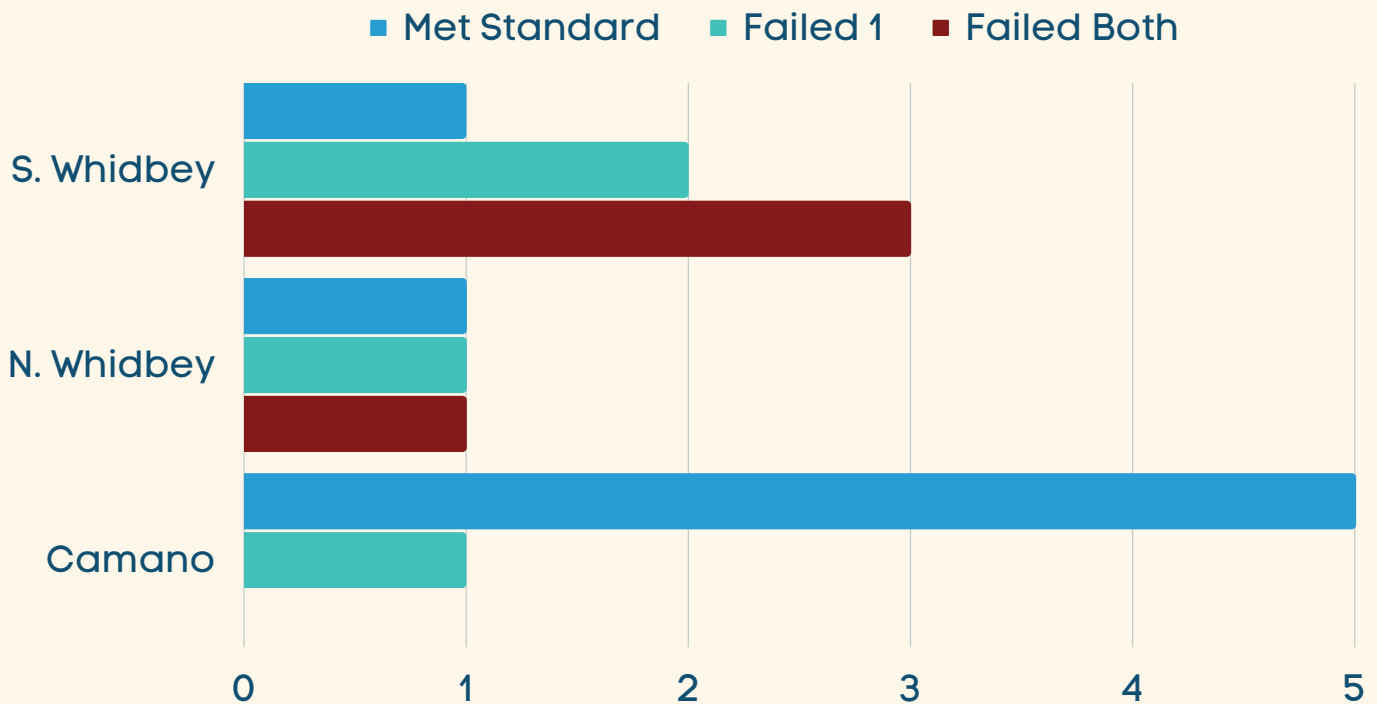
# Water Standards

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

1 out of 6 streams tested on S. Whidbey met the standard

5 out of 6 streams tested on Camano met the standard

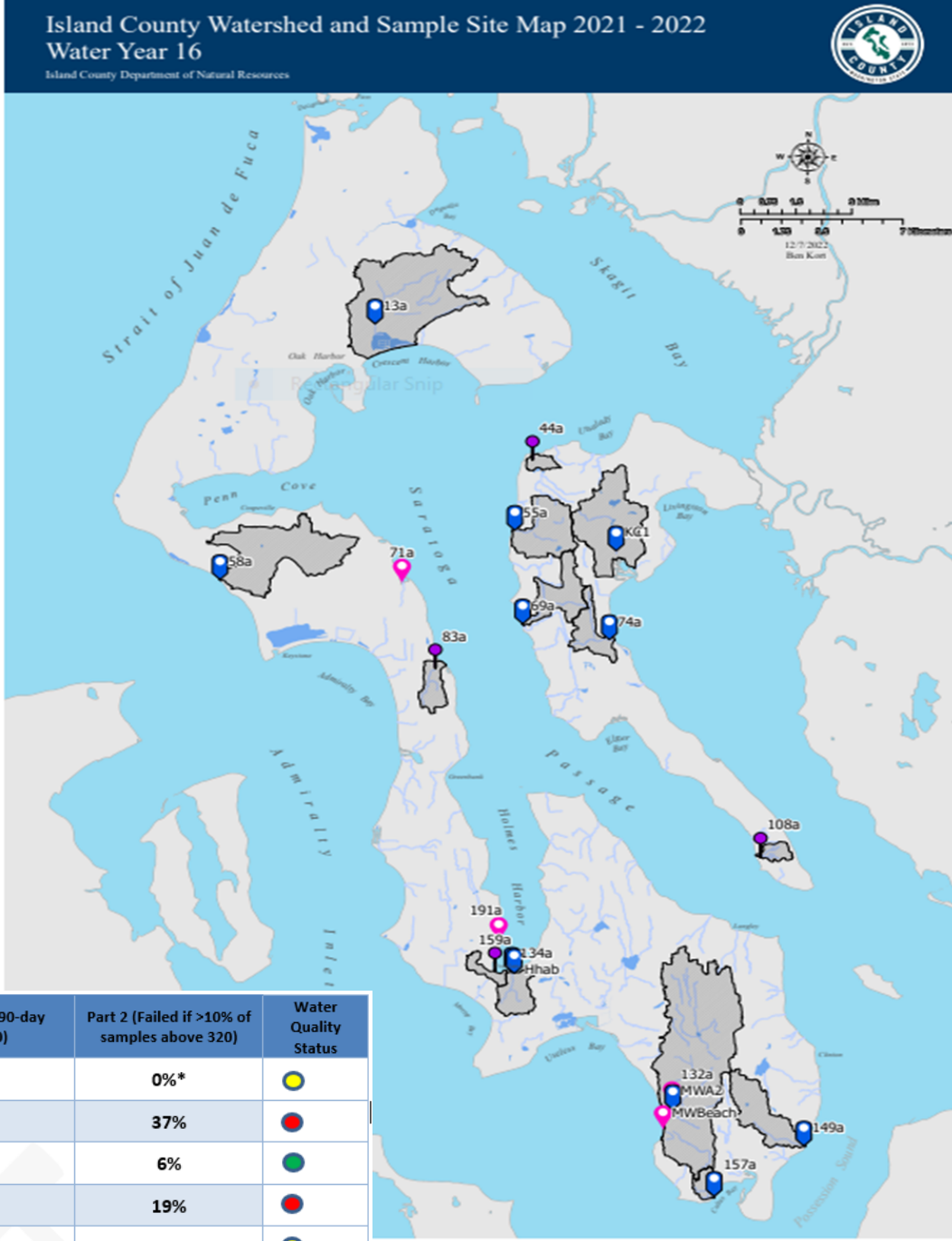
1 out of 3 streams tested on N. Whidbey met the standard



- 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 geomean >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).



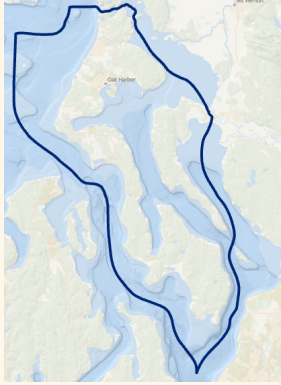
Sample Site	Part 1 (Failed if GM during 90-day averaging period >100)	Part 2 (Failed if >10% of samples above 320)	Water Quality Status
13a Crescent Creek	Failed	0%*	●
58a Ebey's Reserve	Failed	37%	●
83a Cross Creek	Met Standard	6%	●
149a – Glendale	Failed	19%	●
157a – Scatchet	Failed	5%	●
MWA2 – French Road	Failed	33%	●
Hhab – E Freeland Park	Failed	6%*	●
134a – Freeland Park	Met Standard	8%*	●
159a Nichols	Failed	13%	●
55a Carp Creek	Met	0%	●
69a Chapman Creek	Met Standard	0%	●
74a Cavalero Creek	Met Standard	0%	●
KC1- Kristoferson Creek	Failed	0%*	●
44a Brokaw at Rocky Point	Met Standard	8%	●
108a South Camano	Met Standard	0%*	●
*Low numbers of samples			

Above: Sample sites for Water Year 16 in Island County

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

# 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:

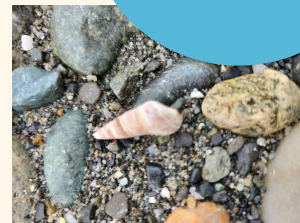


Chemical

Biological



Physical





# 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/>