

Island County Surface Water Quality Highlights - 2019

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Island County Surface Water Quality Program (SWQP) monitors fresh water streams throughout Island County. Annually we produce a report that can be found on the Island County Natural Resources page. The intent of this document is to highlight some current and ongoing projects the SWQP is working on.

2019 Surface Water Sample Totals

Total Samples	Total Whidbey	Total Camano
327	205	122

Glendale Source Identification Project

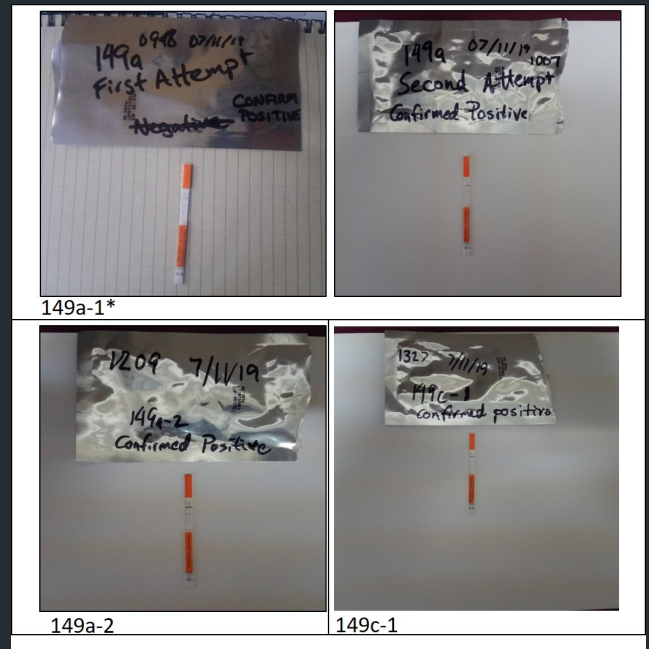
The Glendale Watershed (#149) was the first priority watershed to be a candidate for stream bracketing (sampling up the stream to identify the location of the source of pollution). This Watershed was chosen because there are few side channel streams and is relatively easy to access. This watershed has ranked high on our watershed prioritization list for many years due to Washington State Department of Ecology (WA ECY) state standard exceedances. Initial stream bracketing within the Watershed consisted of four water samples taken at Glendale Creek during the dry season, analyzing fecal contamination. Samples began at the outlet, and continued up towards the headwaters in an effort to determine contributing sources of fecal coliform contamination along the creek.



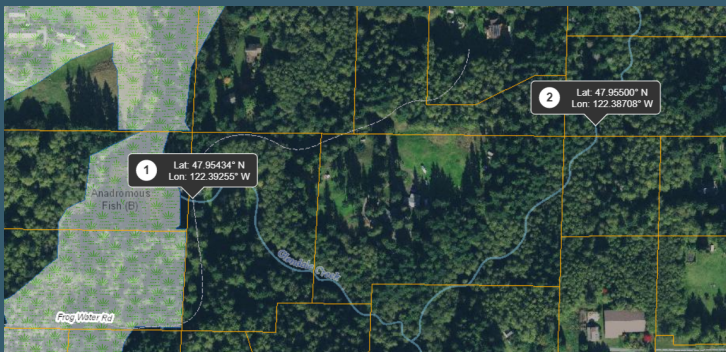
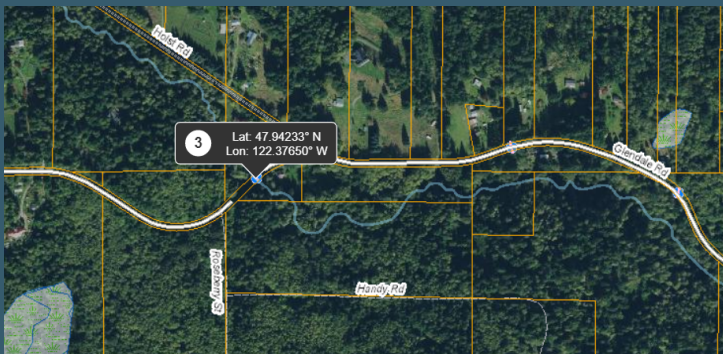
Stream Bracketing Sampling Sites: 149a=Site 1,
149a-1=Site 2, 149a-2=Site 3, 149c-1=Site 4

Glendale Continued

For each site, a rapid field test was taken to determine if there was any fecal contamination above WA ECY State standards. If the test was positive, a second sample was taken from that site and analyzed in both the Island County Lab (using Coliscan easy growth plates) and Edge Analytical Labs. Results from the entire Glendale watershed indicated fecal coliform contamination exceeding WA ECY State standards.



Positive/Negative Rapid Field Tests



In an effort to determine the origin of fecal coliform contamination, a third sample was taken at each site for use in Microbial Source Tracking (Quantitative Polymerase Chain Reaction). These tests help us determine how we will proceed in trying to track contamination through the watershed. Microbial Source Tracking was used during the wet season (October- April). Fecal coliform detection levels were too low for successful MST results. A fourth sample was taken from the sites and analyzed by both the Island County and the Edge Analytical labs. Results from both labs were also negative for fecal coliform.

We have performed another Microbial source tracking project with the same stream and the same bracketing methods during the dry season to look for cyclical patterns we suspect caused the high hits in the previous dry season. We are currently waiting on MST results from King County Labs.

Watershed Planning

Watershed Analysis and Prioritization

- The Island County Watershed Planner configured our system database to generate both monthly (seasonal) and annual trends for all data parameters collected at sample site.
- Long term data analysis helps to visualize trends in parameters in watersheds with high contamination levels. This will allow us to elucidate temporal patterns as well as set up a tools to analyze trends in water chemistry (pH, temperature, dissolved oxygen, etc.). We will use these tools to determine what parameters correlate with high contamination levels. This has the potential to aid in determining the best remediation efforts for impaired watersheds.

Operational Planning Phases

3 year Planning Phases based off of watershed prioritization will allow us to focus our attention on specific areas in which we can implement measures to try to better track and pin point causes of pollution. This is a shift from annual prioritization of watersheds which does not give us adequate time to implement control measures. For example: The Glendale MST Project is currently in the year two operational phase.

- Year One
 - Watershed Planning (gathering of Information)
 - Select the next priority watershed, gather information, ask questions and form our method so the SWQP team can conduct the watershed analysis.
- Year Two
 - Watershed Monitoring and Source Identification
 - Implement the method identified to find the source of contamination.
- Year Three
 - Synthesis of a Recommendation/Action Plan
 - The SWQP team collects and presents this data to management and eventually WA ECY to slowly correct the 303d listings within Island County.

Please Visit the Island County Natural Resources Website for more information:
<https://www.islandcountywa.gov/Health/DNR/Surface-Water/Pages/Home.aspx>