

Esquimalt Lagoon Stewardship Initiative

Year in Review 2023



Capital Regional District

The Esquimalt Lagoon Stewardship Initiative (ELSI), supported by the Capital Regional District (CRD), is a coalition of community and environmental groups, institutions, and governments working together to protect, enhance and restore Esquimalt Lagoon and Coburg Peninsula. This update highlights ELSI's work in 2023.

European Green Crab Monitoring



ELSI volunteers worked with the DFO's Aquatic Invasive Species program to monitor the lagoon for invasive European Green Crabs (EGCs), which were originally detected in the lagoon in 2019. In 2023, fortunately no EGC were found and ELSI's EGC monitors volunteered for approximately 125 hours.

Bee Creek Cutthroat Trout Monitoring

The Bee Creek cutthroat trout monitors were busy between May and October of 2023. Fish were monitored at 6 sites along Bee Creek monthly. Volunteers found 112 cutthroat trout in 2023. The small group of dedicated fish monitors volunteered a total of 260 hours in 2023.

Tire Wear Toxin Monitoring

ELSI volunteers worked with the BC Conservation Foundation and Vancouver Island University's Applied Environmental Research Lab to monitor the tire wear toxin, 6PPD-quinone in Colwood Creek. 6PPD-quinone was recently discovered as the cause of "urban runoff mortality syndrome" to coho salmon and can enter streams or stormwater via untreated roadway runoff during rain events. Volunteers sampled before, during, and after a rain event for a total of 12 days. This initiative will continue into 2024.

National Urban Park

Parks Canada is creating a network of national urban parks. A National Urban Park candidate site is Fort Rodd Hill-Fisgard Lighthouse and nearby areas of interest for Indigenous partners. ELSI members continued to show interest in the national urban park process and look forward to the pre-feasibility report planned for 2024.

Research Opportunities

ELSI continues to encourage post-secondary research at the lagoon and maintains an online research listing summarizing past research and future opportunities for research at the lagoon.

The CRD continued work on the Harbours Ecological Inventory and Ratings for the Intertidal, Backshore and Subtidal Zones for the core area harbours including Esquimalt Lagoon.

City of Colwood Waterfront Stewardship Plan

The City of Colwood provided a presentation to ELSI on the changes to the draft Waterfront Stewardship Plan including strategies for improved resilience to sea level rise based on detailed Coastal Engineering Analysis. ELSI partners provided feedback and suggestions to the City.

Information Sharing

At the ELSI steering committee meetings, members and local experts provided presentations on the CRD Goose Management Service, the City of Colwood Draft Waterfront Stewardship Plan, coastal waterbirds in the Salish Sea and Esquimalt Lagoon and tracking biodiversity using iNaturalist at Ford Rodd Hill/Fisgard Lighthouse Natural Historic Site.



ELSI members toured Parks Canada's Garry oak learning meadow at Fort Rodd Hill and Fisgard Lighthouse National Historic Site.

ELSI members joined other CRD initiative members for a volunteer appreciation BBQ to celebrate the significant commitment and effort of volunteer to protect and enhance local watersheds and share information between groups.

Outreach and Education

In partnership with Peninsula Streams Society, outreach staff shared the ELSI display, materials, and Esquimalt Lagoon watershed model with members of the public at World Oceans Day at Fort Rodd Hill/Fisgard Lighthouse National Historic Site.

ELSI and Parks Canada shared the ELSI display, materials and how to use the nature-tracking app iNaturalist at Esquimalt Lagoon for the City Nature Challenge. The City Nature Challenge is a four-day biothon to help create a record of biodiversity using iNaturalist.



iNaturalist observations of Oregon grape (left) and miner's lettuce (right) from the City Nature Challenge event.

ELSI supported a beach clean-up organized by BC Hydro at Lagoon Beach.

Water Quality

In 2023, CRD staff sampled the streams and a selection of the stormwater discharges that input into Esquimalt Lagoon. These discharges were sampled once in the wet and dry seasons for E.coli and other parameters. CRD staff also collected surface water samples for 5 weeks in summer and fall at 5 sites in the lagoon for a total of 50 samples for bacteria, metals and physical parameters, including dissolved oxygen. Data was compared with the BC Ministry of Environment and Climate Change Strategy draft water quality objectives for these waters to assess if water quality has changed over time.

E.coli results were low (below a geomean of 200 CFU/100 mL) in the 11 stormwater inputs assessed and all discharges were assigned a low rating.

In the marine water the following parameters were outside the Water Quality Objectives:

- Dissolved oxygen (2 locations, the lowest measurement was in the toe of the lagoon).
- Copper (1 of 10 samples at Portsmouth Drive),
- Cadmium (1 measurement in the toe of the lagoon)
- Zinc (all 5 stations in fall and 2 in summer including the reference after the first flush event),
- Fecal coliforms (all stations in the lagoon, but not outside the lagoon),
- Enterococci (all 5 stations with the most exceedances at the mouth of Colwood Creek),
- Nitrite (in the toe of the lagoon, in the fall).

Compared to Victoria and Esquimalt Harbour, the Gorge and Portage Inlet data, the highest bacterial counts on average (enterococci geomean of 34 CFU/100 mL) were measured in Esquimalt Lagoon and are likely due to birds (based on past CRD investigation).

Marine water quality results indicate that parameters for which water quality objectives were developed remain of concern in 2023, and that water quality in the harbours in 2023 is similar to that measured in 2018 and 2011/2012.

Focus Areas for 2024

- Discuss collaborative action plan regarding the Colwood Waterfront Stewardship Committee and Colwood Waterfront Stewardship Plan.
- Continued support for existing volunteer programs and development of new programs as opportunities arise.
- Development of new ELSI educational materials for use at special events and public locations.