

Esquimalt Lagoon Stewardship Initiative 2018 Annual Update



Introduction

The Esquimalt Lagoon Stewardship Initiative (ELSI), supported by the Capital Regional District (CRD), is a coalition of community and environmental groups, institutions, governments and First Nations working together to protect, enhance and restore Esquimalt Lagoon and Coburg Peninsula. After forming in 2001, ELSI developed a Stewardship Plan for Esquimalt Lagoon which provides the framework for a coordinated approach to environmental management of the area. The consensus-based steering committee is responsible for guiding the implementation of this plan. The initiative creates opportunities for collaboration on environmental projects and outreach activities, and provides a forum for exchange and sharing of information. A part-time ELSI coordinator, funded through the CRD, initiates and manages projects, seeks funding and coordinates the initiative.

In 2018, ELSI provided input to Colwood's Urban Forest Strategy and the final draft of the Official Community Plan. ELSI members investigated water licensing on Colwood Creek to gain insight into unusually low water levels observed in the creek. The steering committee gained new members representing two strata properties on the lagoon. The terms of reference were updated to reflect current demographics in the community around the lagoon. Two interpretive signs and a carved cedar mural commissioned by ELSI in 2008 were installed at the lagoon on Royal Roads University property. Volunteers continued fish monitoring programs in the creeks that enter the lagoon and attended community events with the ELSI display and watershed model.

Vision

To protect, enhance and restore the health of Esquimalt Lagoon for future generations of people, plants and animals.

Goals

- Promote and support lagoon stewardship and education
- Prevent further loss or destruction of habitat and wildlife
- Reduce contaminant inputs to the lagoon
- Promote environmentally protective recreation use in the lagoon area
- Promote environmentally protective land use

Pictured above: Paddlers at the lagoon celebrate National Indigenous Peoples Day on June 21 at Royal Roads University.

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Highlights

Water Quality

CRD staff collect water quality data annually from Colwood, Bee and Selleck creeks and a selection of stormwater flows that discharge into the lagoon.

In 2018, staff assessed nine stormwater discharges in Esquimalt Lagoon for public health concern. Public health concern ratings were high for Lagoona Brook, moderate for Colwood Creek, and low for the remaining discharges.

In addition, staff conducted extensive marine sampling in Esquimalt Lagoon in 2018. Five locations were sampled for five consecutive weeks in the summer (August to September) and fall (October to November). Concentrations of bacteria, nutrients and metals were measured on each visit. This data will be available in the fall of 2019.

2017 data indicated that Colwood Creek water quality was good at the mouth but poorer upstream. With the exception of phosphorus and *E.coli*, no water quality parameters exceeded guidelines for protection of aquatic life at the mouth of the creek. However, metals (copper, chromium, iron and zinc), dissolved oxygen, turbidity and suspended solids, phosphorus, pH and *E.coli* were above guidelines just downstream of Sooke Road, at Hagel Road and downstream of Glen Lake. Exceedances of guidelines coincided with heavy rainfall. In the fall, poor site water management on a construction site downstream of Glen Lake impacted water quality for approximately three weeks.

In 2019, staff will intensively monitor water quality in Bee and Selleck creeks and continue to monitor stormwater discharges into the lagoon. Staff will also continue to conduct bacterial source investigations on the high and moderately-rated discharges into the lagoon.

Land & Water Use

ELSI provided input to Colwood's new Urban Forest Bylaw. As Colwood had no tree protection bylaw, this was seen as a very positive step. ELSI suggestions included adding wildlife trees to the definition of protected tree, encouraging residents to remove invasive trees (e.g., English holly, English hawthorn), and requiring that most tree replacement species are native rather than introduced.

ELSI provided comments to Colwood on the final draft of the Official Community Plan. Topics included encouraging Colwood to include Green Shores™ principles into shoreline planning and development, adding reference to the many unnamed creeks that flow into Esquimalt Lagoon, and promoting conservation of coastal sediment processes.

ELSI volunteers have noticed that in recent years there have been very low flows in the lower reaches of Colwood Creek, potentially causing seasonal stress to fish populations from higher temperatures. This raised concerns that volumes of water being withdrawn from the creek through historical water licenses may be too large for the current conditions now prevailing. To this end, the manager of the Royal Colwood Golf Course was invited to a meeting to discuss concerns about environmental flows into the lower reaches of the creek. Members learned that the golf course uses a very efficient irrigation system; the weir at the lake on the golf course, fed by Colwood Creek, is never adjusted; and the golf course has not changed the outflow properties of the weir in the past 26 years. Aqua-Tex Scientific Consulting has been monitoring water depth at five locations throughout the length of Colwood Creek since 1985. Following discussion of the water level issues in the creek, the suggestion was made to install a water depth sensor in Colwood Lake.

Stewardship and Outreach Events

ELSI members attended several events in the community including Mother's Day Paint-In at Royal Roads University (RRU), National Indigenous Peoples Day at RRU, Canada Day at Fort Rodd Hill and Eats & Beats at the Beach on



A volunteer appreciation barbecue was held at the Gorge Waterway Nature House, with volunteers from partner organizations in the region.



A newly constructed water diversion structure at Pacific Landing is designed to attract spawning fish. Coarse woody debris provides shade and protection from predators, and riparian plants will provide cover and food for insects in the stream.

Coburg Peninsula. The interactive watershed model of the lagoon was brought to most of these events. ELSI volunteers collaborated with the Greater Victoria Green Team at a broom pull and beach clean-up along with students from Dunsmuir Middle School.

Fish Monitoring

Department of Fisheries & Oceans staff discussed the fish monitoring program with volunteers and committee members on a tour of Colwood Creek. ELSI volunteers continued regular monthly sampling at four sites on Bee Creek between May and October 2018. For the first time the sites were mapped using GPS. Healthy populations of cutthroat trout were recorded in May and June. A site near the mouth of Bee Creek showed low numbers, possibly due to an alteration in the channel where the stream now flows under tree roots. The middle reaches of the creek showed consistent numbers of cutthroat throughout the season. Fewer fish were found at an upstream site, possibly due to pedestrian and dog traffic on the adjacent trail. Later in the season, an additional site lower downstream was added to the program, and many large healthy trout were found there, some measuring up to 180 mm fork length. Volunteers set

up a new website where data and photographs are posted: beecreek.ca

ELSI members did not sample fish in Selleck Creek in 2018, and Colwood Creek was sampled only twice due to unusually low water levels. Coho and cutthroat were found there in June and again in September, but trapping was suspended in the intervening months to reduce stress on the fish.

Bee Creek Restoration

As development of the Pacific Landing site progresses, the community continues to monitor and protect Bee Creek, the riparian area and the migratory bird sanctuary. An exciting project is currently under way using groundwater diverted from perimeter drains and directed into a newly constructed channel with spawning gravel, riffles and pools. The channel flows into the mouth of Bee Creek and is designed to provide spawning habitat for cutthroat trout. The riparian plantings have been selected to optimize food and shelter habitat for birds, amphibians and mammals. Many of the plants were salvaged from construction sites in the region, thus maintaining local genetic stock. An interpretive boardwalk trail will be constructed to provide controlled access to the site.



Esquimalt Lagoon Stewardship Initiative

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ELSI Partners

Committee Members

- Canadian Wildlife Service
- Capital Regional District
- City of Colwood
- City of Langford
- Parks Canada
- Royal Roads University
- Victoria Natural History Society
- Local residents

Advisory Members

- Esquimalt Nation
- Songhees Nation
- BC Ministry of Environment & Climate Change Strategy
- Department of National Defence
- Environment and Climate Change Canada
- Fisheries and Oceans Canada

Pictured above: A local artist created a series of driftwood bird sculptures at Esquimalt Lagoon. These photogenic artworks were very popular, but the consequence resulted in heavy trampling and loss of fragile dune plants all around the sculptures. Dune vegetation is critical for reducing erosion and providing bird habitat.



Focus for 2019

In 2019, ELSI will focus on:

- Reviewing and providing comments on development proposals in the lagoon area
- Working with Colwood and the Canadian Wildlife Service to incorporate interpretive signage at the lagoon
- Providing input to habitat inventory, bird and fish surveys being initiated by CRD Harbours Program
- Working with our partners to improve water quality in the lagoon and investigating nutrient sources entering the lagoon and its tributary creeks
- Promoting activities that engage the community in stewardship of the Esquimalt Lagoon watershed

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