

Our Vision

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

Our 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 uses in the lagoon area
- Promote environmentally protective land uses



The Esquimalt Lagoon Stewardship Initiative

The Esquimalt Lagoon Stewardship Initiative (ELSI) is a broad coalition of community and environmental groups, institutions, government and First Nations, working together to protect, enhance and restore the Esquimalt Lagoon and Coburg Peninsula.

After its founding in 2001, ELSI developed a Stewardship Plan for Esquimalt Lagoon which provides a framework for a coordinated approach to environmental management. ELSI creates opportunities for collaboration on environmental projects and outreach activities and provides a forum for the exchange and sharing of information.

ELSI is led by a consensus-based steering committee responsible for guiding the implementation of the Esquimalt Lagoon Stewardship Plan. Two working subcommittees focus on implementing outreach, education, planning and restoration. ELSI is chaired by the Capital Regional District's Stormwater, Harbours and Watershed Program (SWHP) and a part-time coordinator, funded through SWHP, initiates and manages projects, seeks funding and coordinates ELSI.

Accomplishments

In 2008, ELSI:

- Promoted lagoon stewardship and education through displays and events, including "Celebrating Esquimalt Lagoon: Past Present and Future" as part of the Emily Carr Community Festival of the Arts and Ecology
- Continued the pilot dune habitat restoration to prevent further loss and destruction of habitat
- Continued the fish monitoring program in tributary creeks
- Conducted water quality monitoring to screen for nutrient inputs to the lagoon
- Contracted a study of the relationship between phytoplankton blooms and fish kill events in the lagoon
- Contracted a study of bird disturbance on the lagoon and worked with the Canadian Wildlife Service to look at options for reducing disturbance to migratory birds
- Provided input to the City of Colwood to establish a dog on-leash bylaw for the lagoon area
- Continued implementation of the Interim Management Guidelines (IMG) for Coburg Peninsula and worked with developers of major projects occurring near the Esquimalt Lagoon to promote environmental stewardship-based land use practices.

Above photo: Major erosion occurred on the tip of Coburg Peninsula during heavy winter storms in early 2008.



Coast Salish dancers performing during the May 18th public event "Celebrating Esquimalt Lagoon: Past, Present and Future." Photo by Gary Woodburn.

ELSI Committee

- Canadian Wildlife Service
- Capital Regional District Environmental Services
- City of Colwood
- Colwood Association for Smart Growth
- Esquimalt Lagoon Enhancement Association
- Go Rowing and Paddling
- Habitat Acquisition Trust
- Local residents
- Parks Canada
- Royal Roads University
- SeaChange Marine Conservation Society
- Victoria Natural History Society
- West Shore Chamber of Commerce

Advisory Members

- BC Ministry of Environment
- Capital Regional District Parks
- Department of National Defence
- Environment Canada
- Esquimalt Nation
- Fisheries and Oceans Canada
- Songhees Nation

Initiatives and Projects

Stewardship and Education

ELSI hosted and participated in several stewardship and educational events at Esquimalt Lagoon in 2008.

A major event was held at the lagoon on May 18th, as part of the Emily Carr Community Festival of the Arts and Ecology. Over 1,000 people came to learn about the past, present and future of the lagoon at this celebratory event. Some of the highlights included:

- EcoRowing on the lagoon
- Aquarium with live marine touch tank
- Coast Salish dance performance
- Dune restoration tours
- Guided bird watching
- Bee Creek restoration tours and fish monitoring demonstrations

At the Fort Rodd Hill and Fisgard Lighthouse National Historic Site's annual Canada Day Celebration, ELSI showcased the outreach display, children's art activity

table and the Esquimalt Lagoon interactive watershed model.

ELSI and its partner Esquimalt Lagoon Enhancement Association received BC 150 funding from the BC Ministry of Tourism, Culture and the Arts for the First Nations Interpretive Sign and Mural Project. ELSI will work with local First Nations to create an artistic mural and interpretive sign to highlight the historical and cultural significance of the lagoon area

Water Quality Monitoring Program

For several years, ELSI volunteers and students have run a water quality monitoring program at Esquimalt Lagoon. The aim is to monitor the long-term health of the lagoon and its

associated wildlife habitat by assessing water quality parameters at critical times of the year. In 2007, dense algal blooms occurred in late summer and fall that caused patchy areas of strongly discoloured water in the lagoon. Concerns about the possible negative effect on the environmental health of the lagoon prompted ELSI to undertake more intensive monitoring in 2008. In addition to the standard annual monitoring by CRD staff, the following actions were also undertaken:

- Water from stormwater discharge sites and creeks analyzed for fecal coliform and nutrients
- Sediment samples at creek mouths analyzed for metals

A dramatic fish kill occurred in the lagoon in Sept. 2008, likely caused by low oxygen levels created by a dense algal bloom. Algal respiration at night used up oxygen, and combined with low water volumes during nocturnal low tides created lethally low oxygen levels for fish.





Mallards are one of the common water birds seen on the lagoon. Photo by Marie O'Shaughnessy

and organic pollutants

- Phytoplankton community analysis of marine waters in the lagoon monitored for presence of harmful algae

The results of the phytoplankton study indicated that the algae involved in the fish die-off were non-toxic, but the density of the bloom correlated with unusually high nutrient levels in the lagoon. Recommendations from this study were to investigate and manage nutrient sources entering the lagoon.

Fish Monitoring Program

Since 2004, ELSI volunteers have conducted a Community Fish Monitoring Program in the main creeks that flow into Esquimalt Lagoon. The main goal of the program is to determine the types of fish that use the creeks and assess the restoration potential of the creeks. Monitoring has confirmed that there are resident populations of cutthroat trout throughout Bee Creek and Colwood Creek and coho salmon in Colwood Creek.

Pilot Dune Habitat Restoration Project

ELSI and the City of Colwood continued the second year of a Pilot Dune Habitat Restoration

project on the Coburg Peninsula. The goals of the project are to restore native dune habitats by establishing and monitoring demonstration restoration plots, realigning benches with beach access points and promoting stewardship and awareness of dune habitats. In 2008, 37 volunteers worked a total of 129 hours to plant 843 native dune plants and remove invasive plants like Scotch broom. This was in addition to the 2000 plants that were planted in the first year of the restoration.

Site monitoring showed that most of the dune vegetation survived well after the first year. However, shrubs that were planted in front of the logs marking the parking area did not fare as well. The shrubs were intended to deter people from walking through the restored areas, but since these plants did not survive well, alternative strategies will be developed to achieve this goal.

MBS and Bird Disturbances

The Esquimalt Lagoon Migratory Bird Sanctuary (MBS) extends approximately 90m inland from the lagoon foreshore. It has become a high use recreation area on both the water and

land portions. Unfortunately, vehicular traffic on the Coburg Peninsula, boating traffic on the lagoon, off-leash dogs and pedestrian traffic throughout the area have resulted in on-going high levels of disturbance to the resident and migratory birds in the area. ELSI is working with the Canadian Wildlife Service (CWS), which regulates and manages MBSs, to achieve a balance between protection of the migratory birds and recreational uses of the lagoon.

In 2008, ELSI commissioned a study by a local bird biologist to examine and quantify the human-initiated disturbances to birds on the lagoon and provide suggestions for mitigation. The study found that boating was the most common human-induced disturbance to the birds. Three main areas of higher bird concentration were observed, consistent with previous studies. ELSI has been working with CWS staff to establish a balance between areas for birds and areas for boats. An outreach strategy including public consultation, education, signage, buoys and a media campaign will be used to achieve this.

Thank you!

Many thanks go to the dedicated volunteer members of ELSI and the community who gave many hours of their time to help accomplish the major projects undertaken in 2008:

- ELSI Pilot Dune Habitat Restoration
- Bird Disturbance Surveys
- ELSI Community Fish Monitoring
- Celebrating Esquimalt Lagoon special event

Special thanks to:

1. BC 150 for the \$7000 contribution to the First Nations Interpretive Sign and Mural Project
2. Students and professors from the University of Victoria Restoration of Natural Systems Program, Royal Roads University and Camosun College Environmental Technology Program who gave their time.



Above photo: This restored section of Bee Creek runs through the proposed Essencia development.

In May 2008, ELSI was presented an award from the Department of Fisheries and Oceans Canada for five years of outstanding services to the fisheries resource in Canada and dedicated support of the Habitat Enhancement Program.

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Interim Management Guidelines for Coburg Peninsula

In February 2007, the City of Colwood adopted the IMG for the Coburg Peninsula, the barrier spit that encloses Esquimalt Lagoon. The IMG

envisions the Coburg Peninsula as an outstanding example of an ecologically diverse barrier spit, where people enjoy a variety of recreational activities, while treating the natural and cultural features with respect. Colwood appointed ELSI as the IMG Implementation Advisory Committee. In this role, ELSI moved the IMG forward by working with Colwood staff to develop a five year implementation strategy, identify budget items and embark on coordinated activities. First year implementation activities included dune habitat restoration, discussions with key parties on protection of wildlife habitat and the development traffic calming plans.

ELSI worked with City of Colwood staff to address erosion issues at the bridge that crosses the mouth of the lagoon. Severe storms during the winter of 2007/08 caused deflation of the beach, allowing waves to impact the north abutment of the bridge. Emergency rip rap repairs were required but later in the year some of the sediments

returned to the beach. ELSI provided input to Colwood engineering staff regarding ecological impacts of a variety of engineering solutions to protect infrastructure along the Coburg Peninsula.

Land Use and Development

ELSI provided input to the development plan process at Essencia, the former Pacific Centre Family Services site on a 4.7 hectare property adjacent to the lagoon. After several community meetings where the developers presented their initial plans, ELSI prepared a coordinated response. The concerns included: proposed building heights, protection of the Migratory Bird Sanctuary portion of the land, sediment control and rainwater management during and after construction, and other issues related to aquatic habitat and wildlife protection. ELSI will continue to provide input to the development plan process as this project proceeds.

Outlook for 2009

In 2009, ELSI will focus on:

- Working with local First Nations on the First Nations Interpretive Sign and Mural Project
- Monitoring the pilot dune habitat restoration project
- Continuing ELSI's fish monitoring program and seeking advice from the Department of Fisheries and Oceans on how to proceed with effective monitoring of the lagoon's creeks
- Working with our partners to improve water quality in the lagoon, and investigating nutrient sources entering the lagoon and its tributary creeks
- Reviewing and updating the Esquimalt Lagoon Stewardship Plan
- Promoting 'bird-friendly' recreation on the lagoon by erecting signs informing the public about dog on-leash requirements and waterfowl refuge areas within the Migratory Bird Sanctuary
- Working with City of Colwood on construction of an accessible arts space on the Coburg Peninsula
- Advising and working with the City of Colwood on implementation of the IMG, including traffic calming, bylaws and signage