



**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY 12 MAY 2010**

SUBJECT HARBOURS ENVIRONMENTAL ACTION PROGRAM – 2009 ANNUAL REPORT

PURPOSE

To present the 2009 achievements of the Harbours Environmental Action Program and highlight the accomplishments of the Esquimalt Lagoon Stewardship Initiative (ELSI) and the Gorge Waterway Initiative (GWI).

BACKGROUND

In the Core Area Liquid Waste Management Plan (LWMP), the Capital Regional District (CRD) commits to coordinate environmental protection and improvement efforts in Victoria and Esquimalt harbours, Portage Inlet, Gorge Waterway and Esquimalt Lagoon, and to work cooperatively with other harbour groups to achieve the goals of the harbours environmental management strategy. These commitments are implemented through participation in the Victoria and Esquimalt Harbours Environmental Action Program (VEHEAP), facilitation of the ELSI and the GWI and carrying out special projects. The CRD's involvement in harbour initiatives is carried out under the Stormwater, Harbours and Watersheds Program (SHWP).

This staff report introduces the Harbours Environmental Action Program 2009 annual report (attached), which is the twelfth annual report on the progress of the initiative. The annual report provides highlights on the harbour projects, outreach activities and partnerships that VEHEAP, GWI and ELSI participated in from January through December 2009.

In 2009, the harbour efforts focused on restoration of a remnant shoreline ecosystem that used to exist along the entire waterway, working with developers and municipalities to improve land use and development, address water quality issues in Esquimalt Lagoon, develop interpretive signs along the waterways and create partnerships with the Esquimalt and Songhees Nations. Other 2009 activities included outreach and community events.

The Harbours Environmental Action Program is very successful, receives significant media attention and is well-received and supported by all stakeholders including funding partners, municipalities, community groups and the public. The 2009 annual reports on the Harbours Environmental Action Program, ELSI and GWI are attached for your information.

FINANCIAL IMPLICATIONS

The 2009 programs were funded through direct service agreements implemented with View Royal, Victoria, Saanich, Esquimalt, Langford and Colwood based on sewage flows. External grants were also received for some projects.

Staff have met with municipal staff to discuss an appropriate cost-sharing formula for the harbours program. A follow-up report regarding establishment of the service and cost-sharing formula will be brought forward at an upcoming meeting.

SUMMARY

During the period January to December 2009, SHWP staff worked effectively with the community to protect and improve the harbours. The integrated approach of working with the community and municipalities is successfully making progress towards implementing the harbours environmental management strategy and achieving VEHEAP's goals. This program actively engages local residents, community and environmental organizations, local stakeholders and government agencies to provide an effective process for dealing with harbour related issues.

Continued support of this program will help to achieve the LWMP commitments to coordinate environmental protection of the harbours through a harbours environmental action program.

RECOMMENDATION

That the Core Area Liquid Waste Management Committee receive the Harbours Environmental Action Program 2009 annual report for information.

Glenn Harris, PhD, RPBio
Senior Manager, Environmental Protection

Larisa Hutcheson, PEng
General Manager, Environmental Sustainability
Concurrence

JW:kam
Attachments: 3

Harbours Environmental Action Program 2009

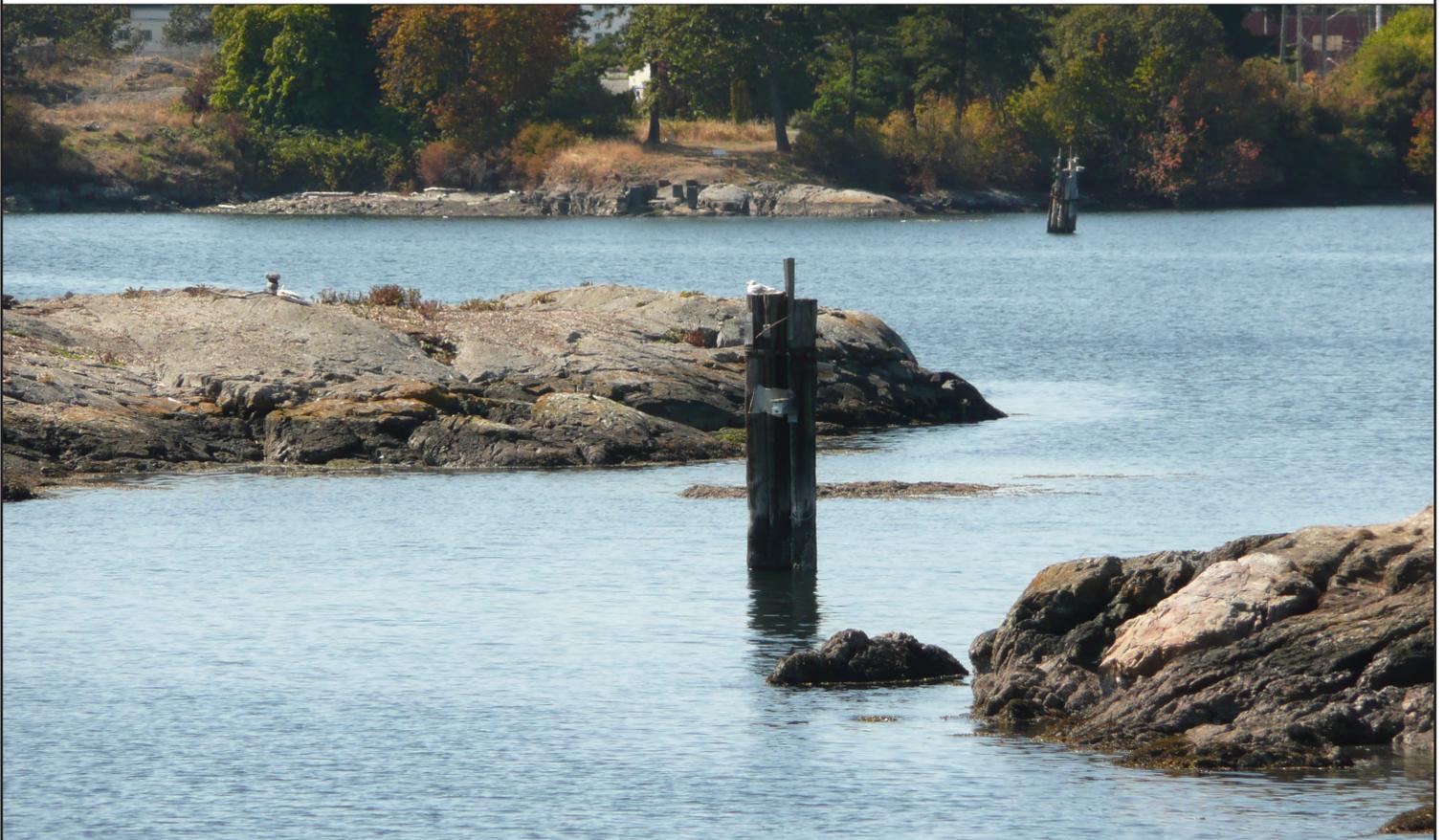
Capital Regional District | 2009 Annual Report

In the Core Area Liquid Waste Management Plan (LWMP), the Capital Regional District (CRD) commits to coordinate harbours environmental protection and improvement efforts in Victoria and Esquimalt harbours, Portage Inlet, the Gorge Waterway and Esquimalt Lagoon and to work cooperatively with other groups to achieve the following harbour goals:

- advocate environmental protection
- decrease contaminant inputs
- protect and enhance habitat quality
- set environmental quality objectives
- achieve environmentally protective land uses
- monitor environmental quality

These commitments are implemented through the Victoria and Esquimalt Harbours Environmental Action Program (VEHEAP) and coordinated harbour initiatives, such as the Esquimalt Lagoon Stewardship Initiative (ELSI) and the Gorge Waterway Initiative (GWI).

The 2009 CRD Harbours Environmental Action Program annual report describes the CRD's participation in VEHEAP and other harbour initiatives, highlights the accomplishments of ELSI and the GWI, and reports on special projects.





Esquimalt Harbour

Victoria & Esquimalt Harbours Environmental Action Program

VEHEAP, an initiative of the main regulatory and jurisdictional government agencies involved in the harbours, was established in 1994 through a memorandum of understanding. The VEHEAP partners (CRD, BC Ministry of the Environment, Department of National Defence, Environment Canada, Fisheries and Oceans Canada, Public Works and Government Services Canada and Transport Canada) agreed to work in a cooperative and supportive fashion to protect and improve environmental quality in Portage Inlet, Gorge Waterway, Victoria Harbour, Esquimalt Harbour and Esquimalt Lagoon. In 2000, the partners committed to an Environmental Management Strategy (EMS) and shared goals for the harbours. These goals became the CRD commitments in the LWMP.

VEHEAP offers two forums through which the partners advance the implementation of the harbour EMS goals. The VEHEAP Information Sharing Committee provides an information forum for member agencies to highlight individual agency actions towards achievement of the harbour goals, discuss harbour issues and concerns, receive updates from the coordinated initiatives and talk about collaborative projects and studies. The VEHEAP Stewardship Committee develops and coordinates agency programs and activities around shared priorities that promote environmental stewardship and conservation of ecological values in the harbours and their watersheds.

Coordinated Initiatives

The CRD participates in coordinated harbour initiatives for the five harbour areas identified in the LWMP.

Esquimalt Harbour

The CRD sits on the DND-coordinated Esquimalt Harbour Steering Committee and Environmental Advisory Committee which consists of representatives from local governments and organizations with an interest in Esquimalt Harbour.

In 2009, this group advised DND on the five-year plan for Esquimalt Harbour, provided input into the sediment risk management program for the harbour, discussed common approaches to derelict and abandoned boats at anchor in the harbours and the Gorge Waterway and advised on potential environmental issues surrounding plans for Navy Centennial to be held in June 2010.

Victoria Harbour

The CRD holds a seat on the board of the Greater Victoria Harbour Authority (GVHA). In 2009, CRD staff participated in a stakeholder committee advising the GVHA on a new development plan for Ogden Point.

The CRD worked with City of Victoria staff to gather all known environmental information for the site of the proposed International Marina in Victoria Harbour. Staff also assisted Victoria staff in determining the appropriate federal and provincial jurisdictions, what referrals and approvals may be required, and provided contacts within the federal and provincial agencies involved with VEHEAP.

Esquimalt Lagoon, Gorge Waterway & Portage Inlet

The CRD coordinates and supports ELSI and GWI, the community-driven initiatives focused on Esquimalt Lagoon, the Gorge Waterway and Portage Inlet. This involves facilitating and chairing the steering committee, liaising with member groups, managing projects, obtaining external funding and providing support to the working subcommittees. The accomplishments of ELSI and GWI are highlighted in their annual reports, which accompany this report.

Special Projects

The CRD also works on a variety of special projects that contribute to achieving the harbour commitments in the LWMP.

Harbours Online

The CRD website contains extensive information about Victoria and Esquimalt harbours, Portage Inlet, Gorge Waterway and Esquimalt Lagoon. The site, available at www.crd.bc.ca/watersheds, includes detailed ecological information on the wildlife, plants, ecosystems and geology of the harbours, historical facts and photos, and provides users with information on how they can help protect the harbours.

The Harbours Atlas is a web-based information and mapping tool that brings together environmental and land use information for the harbours and their watersheds. Users are able to retrieve ecological and geographic data from over 70 layers of spatial information, including harbour vegetation, marine fauna, substrates, sensitive shoreline habitats, seasonal bird use and density and underwater videos. The Harbours Atlas remains widely available—free of charge—at www.harboursatlas.ca.

Green Roof & Living Wall Project

The CRD received funding from the Union of BC Municipalities to install and monitor an extensive green roof, an intensive green roof and a living wall on the CRD headquarters building.

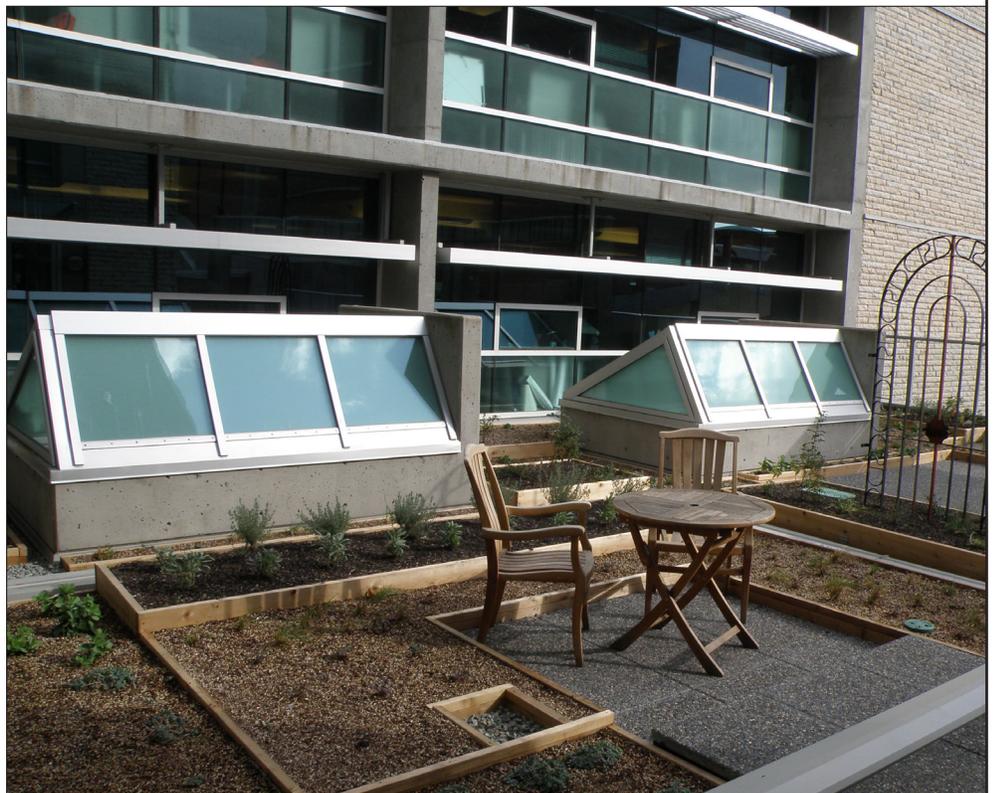
Approximately 540 m² of extensive green roof using pre-grown sedum mats (stonecrop-type plants) was installed on the CRD headquarters building. Extensive green roofs use a shallow growing media (<six inches), low growing, drought tolerant plants, and require very low maintenance. The 140 m² intensive green roof, which is accessible by staff, was installed on the second floor patio and features seating areas interspersed with native plants and shrubs typically found in a Garry Oak ecosystem, fruit trees and an urban gardening area

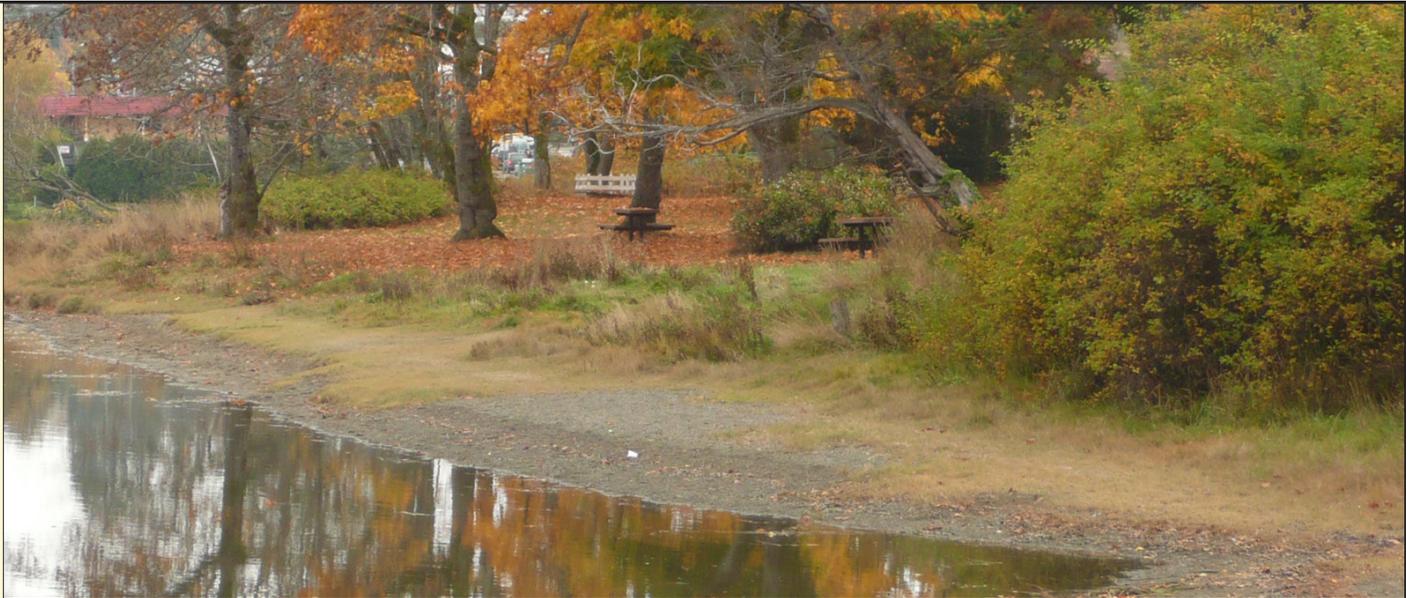
for staff. Intensive green roofs use deep, organic soils (>12 inches), can grow a greater variety of plants and require more maintenance (weeding, watering, pruning). The 26 m² living wall was installed on the exterior wall by the Centennial Square entrance to the main lobby of the CRD. Living walls are vertical gardens where plants are rooted in fibrous material anchored to a wall.

Through a partnership with the BCIT Centre for the Advancement of Green Roof Technology, the extensive green roof and the living wall will be monitored to provide real-time regional data on the environmental and economic benefits of these innovative technologies. Monitoring will include a measure of rainwater retention and runoff reduction (average annual runoff, peak flow rate reduction in wet and dry season) and temperature and energy statistics (membrane temperature, diurnal temperature fluctuation, reduction in average daily heat flow through the roof, reduction in total energy demand).

The CRD green roof and living wall will be highly visible to the public and will serve as a demonstration for these technologies in the region. Conversion of rooftop areas to green roofs will significantly reduce the amount of rainwater leaving the CRD headquarters building and lessen the impact of stormwater on the harbour environment. Additional benefits include heating or cooling savings by insulating buildings, increased life span of roof, aesthetic benefits, air quality benefits, reductions in the 'urban heat island' effect and providing wildlife habitat in an urban environment.

Completed green roof at CRD Fisgard headquarters





Gorge Waterway in the fall

An Integrated Approach

During the period of January to December 2009, the CRD worked effectively with municipalities and the community to protect and improve the harbours and their watersheds. This was particularly evident through partnerships such as ELSI and GWI. Through outreach and education, participation in community monitoring programs, restoration and cleanup projects, these initiatives have actively engaged local governments, residents, community and environmental organizations, and other stakeholders, and have provided a more effective method for dealing with harbour environmental issues.

Successful environmental management and stewardship of the harbours requires the cooperation, coordination and commitment of the community and government agencies responsible for harbours environmental management. Taking an integrated approach and refocusing efforts to work directly with multi-stakeholder groups that are largely community driven and that include local residents proves to be an effective approach. Significant progress towards the achievement of the CRD's LWMP commitments and harbour goals continues to be made.

For more
information,
contact:

Harbours and Watersheds Coordinator

T 250.360.3065
625 Fisgard Street
PO Box 1000
Victoria, BC
V8W 2S6

www.crd.bc.ca/watersheds



Making a difference...together



Westsong Walkway

Important Links:

CRD Harbours and Watersheds

www.crd.bc.ca/watersheds

Harbours Atlas

www.harboursatlas.ca

Natural Areas Atlas

www.naturalareasatlas.ca

Esquimalt Lagoon

Stewardship Initiative

www.elsi.ca

Gorge Waterway Initiative

www.gorgewaterway.ca

Victoria and Esquimalt Harbours
Environmental Action Program

www.veheap.ca



Sea Scouts receiving the World Conservation Award for their efforts restoring Point Ellice Shoreline.

Our Vision

Promotion of a healthy environment for all life in the Gorge Waterway, Portage Inlet, and their watersheds and communities for the well-being of present and future generations.

Our Goals

- provide a forum for the exchange and sharing of information regarding the Gorge Waterway, Portage Inlet and their watersheds
- promote education and awareness programs on appropriate land and water use
- establish and encourage activities that show care and concern for the natural environment

Background

The Gorge Waterway Initiative (GWI) is a collaborative, community-driven group of organizations working to protect, enhance and restore the natural and cultural features of the Gorge Waterway, Portage Inlet and the surrounding watersheds.

GWI provides a unique framework for a coordinated approach to environmental stewardship of the Gorge Waterway, Portage Inlet and their watersheds through information sharing and fostering partnerships. GWI's members include representatives from community and environmental groups, landowners, local governments, local government advisory committees and recreational users, ensuring a broad array of interests are represented.

The GWI is led by a consensus-based steering committee that is responsible for guiding the implementation of the Gorge Waterway Stewardship strategy. The GWI is facilitated by the Capital Regional District (CRD) and a part-time coordinator initiates and manages projects, seeks funding and provides administrative support.

During 2009, the GWI improved community appreciation and stewardship for the waterway, provided input on development projects, conducted projects to restore habitat and worked to protect threatened and endangered wildlife on the waterway.

2009 Accomplishments

Community Outreach

The GWI continued to host the popular Gorge Waterway Speakers Series, a series of free public lectures on various waterway and watershed topics. The first event featured Jeremy Gye and Judith Cullington, from the Urban Forest Stewardship Initiative, who presented on the Woods of our Waterway. At the "Heron on the Gorge" event, Trudy Chatwin, species at risk biologist from the BC Ministry of Environment, discussed heron biology and provided a close-up look at adults, chicks and nests during a tour of the heron rookery at Cuthbert Holmes Park. The third in the 2009 series showcased Grant Keddie, curator of archaeology at the Royal BC Museum, who shared stories and evidence of First Nations use of the area for the past 25,000 years. Over 300 people attended these events.

The GWI also hosted their information display, the interactive watershed model of the waterway, and the Seaquaria marine touch tank at community events including Vic West Community Fest, Canada Day Picnic on the Gorge, Connecting for Conservation, Rivers Day and Oceans Day.

An information sheet highlighting the shoreline restoration efforts at Point Ellice was developed. This is the seventh in a series of GWI Infosheets providing detailed information about important ecological and cultural values of the waterway. The whole series is available on the GWI website.

GWI Partners

Community Members

- Burnside Gorge Community Association
- Friends of Cuthbert Holmes
- Gorge Tillicum Community Association
- Gorge Waterway Action Society
- Portage Inlet Protection Society
- Portage Inlet Sanctuary Colquitz Estuary Society
- POLIS Institute on Ecological Governance, University of Victoria
- Seachange Marine Conservation Society
- Seaquaria in Schools
- Victoria Canoe and Kayak Club
- Victoria West Community Association
- World Fisheries Trust

Local Government Members

- Capital Regional District
- City of Victoria
- Victoria Shoreline and Environmental Advisory Committee
- District of Saanich
- Township of Esquimalt
- Esquimalt Parks and Recreation Commission
- Town of View Royal
- View Royal Parks, Recreation and Environment Advisory Commission

The GWI continues to promote community stewardship of the waterway through the website. It provides information about GWI projects and initiatives and links to detailed information about the history, ecology and stewardship of the Gorge Waterway and Portage Inlet.

Visit us at:

www.gorgewaterway.ca

Gorge Waterway Discovery Centre

The GWI is a proud supporter of the Gorge Waterway Discovery Centre (GWDC), located in Esquimalt-Gorge Park. The Centre houses interactive exhibits such as a marine aquarium and touch tank filled with underwater creatures from the Gorge Waterway, a watershed model and many other displays.

The GWDC offered community and school programming delivered by local biologists, students and volunteers throughout 2009, bringing a total of 2200 people through its doors during public hours. Another 650 students participated in school programs at the GWDC.

This educational amenity on the Gorge is the result of partners, including the World Fisheries

GWI outreach programs partner with Seachange and Gorge Waterway Discovery Centre to teach about marine life in the Gorge.

Trust, Seaquaria in Schools, GWI, and Township of Esquimalt Parks and Recreation Services, working together for environmental education programming.

The partners share a common vision of a space for youth and adults to engage in environmental education and restoration initiatives focused on the connections between forest, wetland, stream and marine environments.

In 2009, an Infrastructure Planning Grant made it possible to develop conceptual drawings for expansion of the centre, however, multi-year funding for programming has been challenging.

Purple Martin Nest Box Program

The GWI is working to re-establish nesting colonies of Purple Martin (*Progne subis*) along the Gorge Waterway and Portage Inlet. Purple Martin is a provincially red-listed species due to its small population size, its historical decline in numbers and range, and continuing loss of its nesting habitat. Through a Purple Martin

nest box program, the GWI provides willing homeowners with nest boxes, helps to install them in the appropriate location and provides training on annual nest box maintenance.

In 2009, five pairs of Purple Martins successfully fledged 13 young from nest boxes installed as part of this program. Two additional sites for nest box installation were also identified.

Land and Water Use

Members of the GWI participated in community consultation with the District of Saanich regarding the replacement of Admirals Road Bridge over the Colquitz River. GWI raised concern over the loss of several Garry oaks, the amount of fill required, and the bridge design. GWI recommended that service cables be located under the bridge rather than overhead, to prevent bird strikes, and the use of rain gardens in the overall design.

GWI kept partners and members updated regarding the berming of Panama



Flats, an important agricultural floodplain for the Colquitz River.

Concern was raised about the increasing number of derelict boats anchored in the Gorge. Inquiries to different government agencies show a major gap in jurisdictions and unwillingness to address this issue. The GWI is investigating what other regions are doing (Sidney, Esquimalt Harbour, Vancouver) and will follow this issue up in 2010.

Members were kept up to date on developments and community meetings regarding the Victoria International Marina proposed for the Victoria Harbour. Members are concerned that a large marina will have significant environmental impacts and would severely restrict access to and use of the waterway by non-motorized boats. Individual members were encouraged to



The volunteer appreciation event on April 24, 2009 was fun for all ages.

attend community meetings and send their concerns directly to the appropriate agencies.

project started in 2008, more than 1500 hours of volunteer labour have removed nearly 15 tonnes of invasives from the site.

Point Ellice Shoreline Restoration

The GWI is working on a major project to restore native vegetation along 130 meters of shoreline at Point Ellice House. This important restoration site, located on a diverse natural shore with pocket beaches and rocky outcrops along the Gorge Waterway, supports a unique remnant of the natural arbutus, Douglas fir and Garry oak forest ecosystems that once lined its shores. In early 2009, volunteers removed massive amounts of invasive plants and replanted with native vegetation. Since the

In April, GWI partners hosted an Appreciation Event to honour the many volunteers who have generously donated their time and energy to this project and to thank organizations that have supported the project. Tours of the restoration site and of the historic Point Ellice House were offered to volunteers. Local politicians and Heritage Branch staff were on hand to thank the 75 volunteers and sponsors in attendance for their efforts.

In the fall, volunteers began planting native trees and shrubs in the cleared areas to help restore this beautiful place. Work to remove remaining invasive species and replant with native vegetation will continue over the next few years.

After invasive species removal, volunteers planted native trees and shrubs along the Point Ellice Shoreline.



Thank you!

Community Volunteers

- Esquimalt High School Leadership and ESCAPE programs
- University of Victoria Students
- Community Service Workers
- Numerous local residents

Government and Business Supporters

- Deloitte
- Ellice Recycle Ltd.
- BC Heritage Branch
- Point Ellice House Staff

Financial Supporters

- Evergreen Walmart Green Grant
- Capital Regional District

You are in a Migratory Bird Sanctuary

THE GORGE WATERWAY AND Portage Inlet are part of the federally designated Victoria Harbour Migratory Bird Sanctuary. The waterway is on the Pacific Flyway for birds migrating between northern breeding grounds and southern wintering areas, making this an important resting stop on their long migrations.

Both resident and migratory birds depend on the fish, shellfish and other

marine species for food. The shoreline and intertidal areas provide important habitat for nesting and resting.

YOU can help the birds by:

- Keeping pets on leash
- Keeping your cats indoors
- Staying away from birds and nests

For more information or to report infractions contact the Canadian Wildlife Service: 1-877-768-6904.

All images courtesy of Marie O'Shaughnessy



Pictured above is one of the interpretive signs to be located in Victoria.

Interpretive Signage

The GWI and municipal staff partners at the Town of View Royal, Township of Esquimalt, District of Saanich and City of Victoria made significant progress on a project to create a series of 12 interpretive signs around the Gorge Waterway that will highlight key ecological and cultural features of the waterway.

A large three-paneled interpretive sign will be located in each of the four partnering municipalities. These colourful and uniquely designed signs will feature a large

map of the waterway, general ecology and history information and will be topped with an artful metal structure. Design and manufacture of these signs was completed in late 2009.

Eight smaller signs focusing on the key ecological and cultural aspects of the waterway were also designed. These signs will be placed in specific areas according to their interpretive values with two small signs in each municipality.

The small signs will highlight the following features:

- The Gorge: Recreation Destination
- The Gorge Narrows

- The Working Waterway
- Migratory Bird Sanctuary
- Underwater Bounty
- Early Settler History
- The Natural Shoreline
- Invasive Species

Manufacture of the small signs will be completed in early 2010 and the entire series will be installed around the waterway following a public unveiling ceremony for the whole project.

For more information, contact:

Gorge Waterway Initiative Coordinator

250.360.3065
625 Fisgard Street
PO Box 1000
Victoria, BC V8W 2S6
info@gorgewaterway.ca

www.gorgewaterway.ca



Outlook for 2010

In 2010, GWI will focus on:

- ongoing communication and outreach with waterway and watershed residents.
- promoting activities that engage the community in stewardship of the Gorge Waterway.
- planning for public input to an overall strategy for the Gorge Waterway and Portage Inlet.
- continuing the removal of invasive species and replanting of native plants at the Point Ellice shoreline restoration project.
- continuing support of GWDC initiatives.
- installing Purple Martin nest boxes at two new sites on the waterway.
- providing coordinated input into review of View Royal and Victoria Official Community Plans.
- completing and installing interpretive signs along the waterway.



Evidence of dense algal blooms in Esquimalt Lagoon can be seen in the discoloured murky water.

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

Background

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 (CRD) Harbours and Watersheds Coordinator. A part-time assistant coordinator, funded through the CRD, initiates and manages projects, seeks funding and coordinates ELSI.

2009 Accomplishments

Water Quality Monitoring Program

The lagoon experienced, for the fourth consecutive year, dense algal blooms in late summer and fall

that caused patchy areas of strongly discoloured water in the lagoon climaxing in fish kills. In 2009, the CRD Stormwater, Harbours and Watersheds Program (SHWP) conducted extra sampling of stormwater discharges flowing into the lagoon and the lagoon itself for pH, temperature, conductivity/salinity, dissolved oxygen, turbidity and nutrients. Upstream investigations also were conducted to look for the possible source of increased nutrients. Analysis of water samples found bacteria from birds and dogs, high phosphorous levels and increased nutrients in both groundwater and stormwater discharges flowing into the lagoon, most likely contributing to extensive phytoplankton blooms, in turn causing low oxygen levels climaxing in fish kills.

A Masters student at the University of Victoria commenced research in Esquimalt Lagoon investigating nutrient dynamics and their relationship to microalgal blooms. This research involves the measurement of three nitrogen forms: nitrate, ammonium and urea, as well as phosphate and silicate in order to better understand how changes in nutrient concentrations and ratios affect the abundance and species composition of microalgae.

For nearly a decade, 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.

ELSI Committee

- Canadian Wildlife Service
- Capital Regional District Environmental Sustainability Department
- City of Colwood
- City of Langford
- 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

Stewardship and Education

ELSI participated in several stewardship and educational events at Esquimalt Lagoon in 2009, including sponsoring two free public talks by local experts on earthquake and tsunami hazards on southern Vancouver Island, and about the birds of Esquimalt Lagoon. ELSI showcased the outreach display and/or the Esquimalt Lagoon interactive watershed model at partner events around the lagoon.

The yearly Scotch Broom removal and garbage pickup events hosted by ELSI are always popular events drawing participation from the community-at-large, and a number of dedicated ELSI community members who also conducted ongoing Scotch Broom removal. Since Scotch Broom is such a pervasive invasive species on Coburg Peninsula, ELSI purchased a tool to make removal easier.

Fish Monitoring Program

In the fall of 2009, ELSI led a tour with the Community Advisor, Department of Fisheries and Oceans, around the lagoon looking at the current state of several main tributaries. Progress was seen on the creeks where recent restoration has taken place. Recommendations were made to closely monitor areas of concern where silt is washing into the creeks and accumulating.

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

Pilot Dune Habitat Restoration Project

Visually, the fall 2007 and spring 2008 plantings of native dune plants (Dune Wild Rye, Beach Pea, Gumweed, Silver Burweed and American Sea Rocket) have done very well and show definite signs of filling in test plots and reclaimed parking areas. However, the taller shrubs (Nootka Rose, Tall Oregon Grape and Snowberry), aimed at encouraging people to use the designated beach entry paths, did not survive in high enough numbers to successfully create a natural barrier along the parking log line. Trampling is still the main cause of dune habitat degradation.

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. Signs explaining the project have been placed in the plot areas and students from Camosun College Environmental Technology Program monitor the restoration plots on a yearly basis.

Migratory Bird Sanctuary and Bird Disturbances

Throughout 2009, ELSI continued to work with Canada Wildlife Services (CWS), which regulates and manages the Migratory Bird Sanctuary (MBS), to achieve a balance between protection of the migratory birds and recreational uses

Children and adults alike learn first-hand how a watershed works at the Fort Rodd Hill Canada Day celebration.





Bridge at Esquimalt Lagoon is under threat due to erosion.



City of Colwood placed dog-on-leash signs on the Coburg Peninsula.

of the lagoon. In late 2009, CWS created Wildlife Refuge Areas within the lagoon to add increased voluntary protection to the birds. This year also saw dog-on-leash signs put up around the lagoon for the City of Colwood's new bylaw on the Coburg Peninsula which conforms with the federal MBS regulations. For both of these initiatives, ELSI conducted public outreach, including stakeholder meetings, and provided information through local papers, the ELSI website and posters at the lagoon.

Interim Management Guidelines for Coburg Peninsula

Due to the storm surges causing continued erosion in 2009, the bridge remained the focus of concern. ELSI continued to work with Colwood staff in order to address erosion issues that are threatening infrastructure while

ensuring that ecological and cultural values are preserved.

In February 2007, the City of Colwood adopted the Interim Management Guidelines (IMG) for the Coburg Peninsula, the barrier spit that encloses Esquimalt Lagoon, and 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. Implementation activities have included dune habitat restoration, discussions with key parties on protection of wildlife habitat, development and placement of bylaw signage, amenities for the public and providing information to Colwood Engineering Department on the important role the process of sediment transport plays in maintaining the peninsula and the safety of the bridge.

Land Use and Development

ELSI continued to actively promote environmental stewardship-based land and water use practices with developers of Aquattro and Essencia, two major projects occurring directly adjacent to the Esquimalt Lagoon. Essencia is a 4.7 hectare property with a proposal for an "eco village" with high density residential/hotel and commercial development. Aquattro is a current 11 hectare high density development of which approximately 200 units of the total proposed 660 units have been completed. The Aquattro development also includes a diversion and enhancement of fish-bearing Selleck Creek. ELSI also provided input into Royal Roads University (RRU) Sustainability Plan and provided input into their development plans for new buildings and a wetland restoration project.

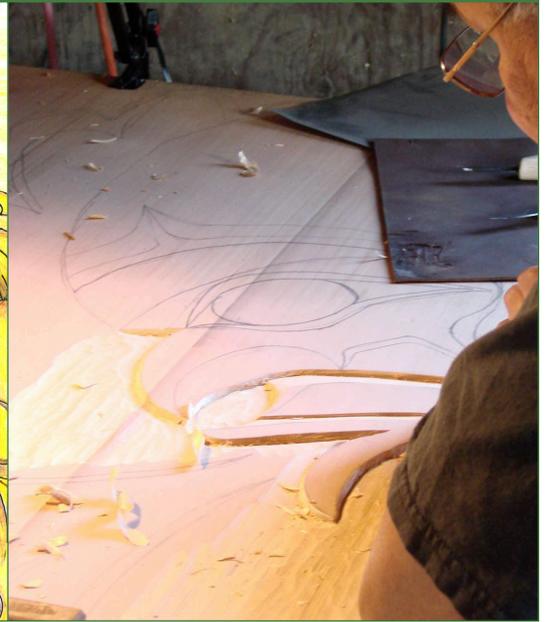
Thank you!

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 2009:

- ELSI Community Fish Monitoring
- Stakeholder and public information meetings regarding Wildlife Refuge Areas at the lagoon
- Speaker Series

Special thanks to:

1. Our partner Royal Roads University, who donated venues for events held by ELSI throughout the year
2. Students and professors from Camosun College Environmental Technology Program who gave their time



Artist Butch Dick, of Songhees Nation, sketch of the Lkwungen mural (left). Butch Dick carving the mural to be placed at Esquimalt Lagoon (right).

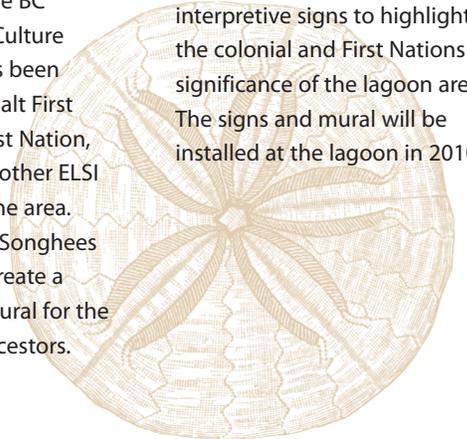
Honouring the Peoples History

The Esquimalt Lagoon has been an important site for First Nations peoples for centuries, both as a traditional home and as a special destination for spiritual being and gathering resources. It is also a significant site of European colonial contact and settlement. Over the years, there have been disturbances to very significant archaeological sites

which have not been properly honoured with apologies and traditional ceremonies.

With funding from the BC Ministry of Tourism, Culture and the Arts, ELSI has been working with Esquimalt First Nation, Songhees First Nation, City of Colwood and other ELSI partners to honour the area. ELSI was able to hire Songhees artist Butch Dick to create a large carved cedar mural for the lagoon to honour ancestors.

ELSI's goal is to help facilitate the needed dialog around the issue. The funding is also going to the development of two interpretive signs to highlight the colonial and First Nations significance of the lagoon area. The signs and mural will be installed at the lagoon in 2010.



For more information, contact:

ELSI Coordinator

T 250.360.3299

F 250.360.3254

info@elsi.ca

625 Fisgard Street

PO Box 1000

Victoria, BC V8W 2S6



What's Next?

In 2010, ELSI will focus on:

- working with First Nations to complete the First Nations Interpretive Sign and Mural.
- completion and placement of mural and two interpretive signs.
- monitoring the pilot dune habitat restoration project.
- continuing ELSI's water quality and fish monitoring programs.
- working with our partners to improve water quality in the lagoon and investigating nutrient sources entering the lagoon and its tributary creeks.
- advising and working with the City of Colwood on implementation of the Interim Management Guidelines.
- continuing to provide input to the development plans of Aquattro and Essencia.