



WATERSHEDNEWS

Stormwater, Harbours and Watersheds Program | Summer 2010: Issue 13



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Who Are We?

The Stormwater, Harbours and Watersheds Program (SHWP) works with municipalities, electoral areas and the community to maintain healthy watersheds and protect the nearshore receiving environment.



As the days grow longer and we move into summer, we spend more time outside in our yards, gardens, parks and beaches. This is a good time to remember that what we do around our homes and gardens can have an impact on downstream waterways and the nearshore marine environment. Choosing to use green home care products and practicing natural gardening techniques contributes to healthier watersheds, and also provides safer places and spaces for our families. Have a great summer, and remember to enjoy the natural areas our region has to offer!

CRPD

Making a difference...together



provides land stewards with the information required to improve the health of Bowker Creek over time. It was completed in final draft form by the end of 2009, and is the culmination of efforts since the BCI was established in 2004. This plan went through many name changes as it was developed, and has become the BCI's version of an Integrated Stormwater Management Plan. The BluePrint is a first of its kind. It shows how an urban creek running through multiple jurisdictions can be cared for and restored over the long term.

The Plan

The Bowker Creek BluePrint builds on existing policies, plans

and information to create a detailed plan of action for the creek corridor and the watershed. To develop the BluePrint, the Bowker Creek Steering Committee worked with additional community members and consultants to recommend improvements over the short and long term. The 100 year planning horizon chosen by the committee recognizes that change can be slow in the urban environment. Having the BluePrint in place will ensure that positive changes can happen incrementally, and that major improvements can be achieved as opportunities arise. Thanks to the information and guidance available in the BluePrint, all land stewards can now plan for the best outcomes for Bowker Creek.

The BluePrint offers ways to deal with the flooding, water pollution, and habitat loss that Bowker Creek has suffered. It also provides recommendations for a greenway corridor and pockets of nature within the urban core of Greater Victoria. There are many synergies between the BluePrint's recommendations and the necessary actions to reduce greenhouse gas emissions and adapt to climate change.

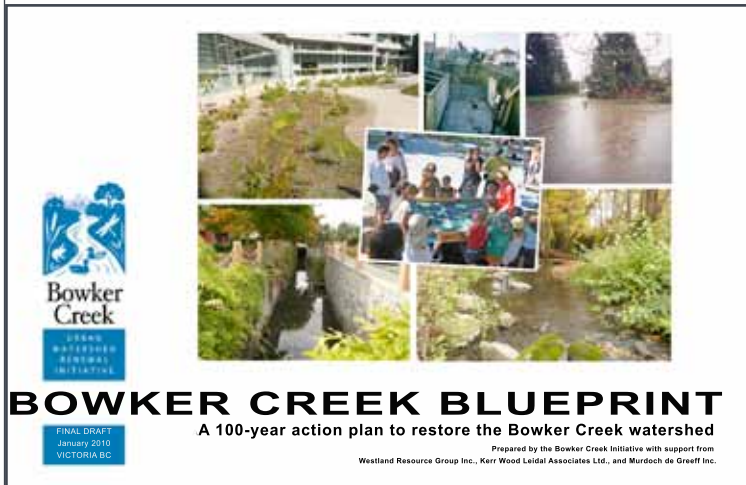
The Bowker Creek BluePrint: A 100-year action plan to restore the Bowker Creek Watershed

Submitted by Natalie Bandringa
Bowker Creek Initiative Coordinator

The Bowker Creek Urban Watershed Renewal Initiative (BCI) is a coalition of communities, governments and institutions working together to protect and enhance the ecological, social and economic health of the Bowker Creek watershed. The BCI was established in 2004 following the completion and adoption of the Bowker Creek Watershed Management Plan by the District of Saanich, City of Victoria, District of Oak Bay, the Capital Regional District (CRD) and community groups.

Recent Accomplishments

In 2009 the main focus of the BCI was to complete The Bowker Creek BluePrint. The full name of this plan is 'The Bowker Creek BluePrint – A 100-year action plan to restore the Bowker Creek watershed'. The BluePrint



"The BluePrint offers ways to deal with the flooding, water pollution, and habitat loss that Bowker Creek has suffered"

Restoration and Monitoring

At Monteith Street in Oak Bay, invasive species were removed on municipal property near the creek. Detailed plans were developed to turn this weedy, overgrown site into an area that supports native plants and a small number of community garden plots. At Browning Park in Saanich, a park renewal plan was approved and greenway trail restoration was begun. Once complete, these efforts will improve the riparian buffer along Bowker Creek. In Victoria, a rain garden was developed on Trent Street near Bowker Creek. This rain garden will serve as a template for further rainwater management in the watershed. Lastly, The District of Saanich began efforts to control invasive yellow willow along the creek. Previous restoration projects continued to be monitored, and water quality data was collected by the CRD as in previous years.

The BCI will continue to work with the District of Oak Bay and volunteers, neighbours and local schools to finish the restoration project on Monteith Street. The Initiative will also continue outreach efforts through public presentations and participation in community events.

For more information visit:
www.bowkercreekinitiative.ca or call the Bowker Creek Initiative Coordinator at 250.360.3302.

Along with many actions to complete over time, ten key actions were recommended as important first steps for municipalities and other land stewards in the next three to five years.

What's Next?

In 2010 the BCI will work to finalize and begin implementation of the Bowker Creek BluePrint. Activities included a public open house in January to solicit community input, and a forum in February to introduce the BluePrint to various municipal staff and community leaders. Once public input is incorporated the BluePrint will be issued in its final form and brought before municipal councils for endorsement. Work on the recommended "Top Ten" actions will continue. In 2010 this will include collaboration with School District 61 during planning and construction of the new Oak Bay High School, participation in the Shelbourne Corridor planning process, and improving the riparian buffer in Browning Park.

Ten key action items for the Bowker Creek BluePrint.

1. Review and revise municipal plans to include Bowker Creek goals and actions;
2. Adopt requirements to reduce effective impervious area for new developments;
3. Remove specific invasive species beginning to colonize the watershed;
4. Complete a pilot project to locate and build a demonstration rainwater infiltration/retention structure in each municipality;
5. Support development of an urban forest strategy in Oak Bay to complement those underway in Saanich and Victoria;
6. Develop a strategy to acquire key properties as they come available;
7. Work with Oak Bay High School to design and implement creek restoration on school district property;
8. Participate in the Shelbourne Corridor Action Plan process, to identify current and future opportunities for creek restoration, rainwater infiltration and/or greenway development;
9. Work with creek-side landowners between Pearl and Trent Streets to achieve the long-term vision; and,
10. Continue with restoration at Browning Park

Gorge Waterway Education Centre

Submitted by Lia Chalifour
Environmental Educator and Field
Officer, World Fisheries Trust

Take advantage of the endless opportunities to make new discoveries and have fun at the Gorge Waterway Education Centre (GWEC), a little-known jewel in the Township of Esquimalt. The GWEC is a little centre with a big heart that has been offering hands-on environmental education to the community since it opened its doors on World Oceans Day, June 8th, 2008.

Set in a beautiful, easily accessible space in Esquimalt Gorge Park, the GWEC is a great place to spend the afternoon with the whole family. The Centre focuses on the human and natural history of the Gorge Waterway, and is home to an abundance of interactive displays and activities for all ages to experience. Bordering the municipalities of Esquimalt, Victoria, Saanich and View Royal, the Gorge Waterway Education Centre is a community resource for everyone.

Walking into the GWEC, you can't help but notice the walls adorned with children's artwork, community event flyers, educational posters, maps, and a history of this unique waterway. Publications by World Fisheries Trust, the Gorge Waterway Initiative, the CRD and local community groups are available for visitors to take home, and the "in house" library has an assortment of fun and educational resources available.

Children were able to pour water on the watershed table to learn about water run-off.



A three-dimensional map of the Gorge Waterway takes centre stage in the room, and helps visitors experience the connection between human activities on land, and the water that surrounds them.

Children flock to the Colouring Centre where they can trace the shapes of local marine creatures. Our interactive digital microscope is also a big hit with both the young and young at heart. Kids love to compare the patterns and textures of different shells, rocks and even their own fingernails. It is surprising to see how many budding scientists emerge from the children who come through our doors!

A long countertop that used to serve up fries and burgers now features a huge diversity of shells, bones and egg-cases, along with a wealth of information about the animals and plants that live in the Gorge Waterway. Along with magnifying glasses, clue games, puzzles and guide books there is enough to keep young and curious minds occupied for quite some time! Finally the Seaquarium provides an up close and personal experience with a living marine ecosystem. Visitors crowd around a touch-tank that is filled with local plants and animals, many of which are found in the Gorge. You can learn about the local critters for yourself by touching and interacting with them, but friendly and knowledgeable staff and volunteers are always there to help you learn more about just who these amazing creatures are, how they eat, where they live, and to share fun and quirky facts about them. Meanwhile, special animals like the hooded nudibranch, sculpin and gunnel fish, the giant acorn barnacle, and the feather-duster tubeworms hang out in the big tank where they can easily be observed as they go about their everyday business.

During weekdays, the Centre also offers in-depth education programs to school and community groups. The Watershed Model Program helps participants understand the effects of storm water runoff on their local watersheds, and explore different ways to contribute to a healthier environment through activities like composting and creating rain gardens. As they walk the creek next to the Centre, they learn about healthy stream habitats and restoration efforts along Gorge Creek, and during the Seaquaria program and Scavenger Hunt, participants experience fun and hands-on activities that help them learn about the animals and plants that live in and around the Gorge.

The GWEC is also facilitating a brand new environmental monitoring program, "Care of the Gorge". So far we've helped groups from Esquimalt High and Shoreline Middle Schools do water sampling and monitoring at a number of sites along the Gorge and Portage Inlet. Combined with



The touch tank is a hit with kids and adults.



regular monitoring near the GWEC, and community-based monitoring in the future, we hope that this kind of data will provide our municipalities with a more comprehensive look at the state of the Gorge Waterway today.

For more information, please contact us at 250.380.7585 or education@worldfish.org, and visit our website at www.worldfish.org.

So what are you waiting for? Come down to the GWEC to experience it for yourself! We're open every Sunday from 11:00 am to 4:00 pm; look for us in the cinder block "concession" building down near the mouth of the creek, by the playground. Admission is by donation.

Visitor Feedback

"Thanks for helping us, in our urban armour, to embrace nature's gentleness. Such important work you're doing here." Cam C.

*"Super fun. Loved the touch tank!! Learned lots -Thanks!"
Keira and Zoe*

"It was a great experience for me and the kids! Thanks so much." Breanne, Taylor, Sydney, Koen, Griffin

"Thank you for a very informative time showing our 3 grandkids as well as ourselves. Much appreciated."

Arnie & Linda T., Sorayn, Matthias & Ezra





Climate Resiliency: Preparing for Impacts

Submitted by Sarah Webb,
CRD

"From invasive species migration, to increased winter flooding, to heat waves coupled with extreme droughts in the summer months, predicted climate impacts present significant challenges to our watersheds – both urban and rural."

When it comes to climate change, recent attention has been on reduction strategies – recognizing that reducing emissions today will play a critical role in how much change we experience in the future. Adapting to climate change and dealing with the economic, environmental and social impacts, however, will present significant implications for local and regional governments, public institutions and the community as a whole.

The emissions we have already released, combined with those we are emitting now and will continue to emit, will affect us well into our grandchildren's lifetimes. Adaptation efforts are needed now as we prepare for the short term and long term effects of climate change in our temperate, coastal region.

While climate change is a global trend, the impacts will be most felt at the local level. National Resources Canada's 2007 National Assessment of Impacts and Adaptation shows that all Canadian sectors, and the wellbeing of Canadians, are threatened. There is a clear need for climate adaptation policies designed to reduce vulnerability and strengthen capacity to cope with impacts, while mitigating emissions.

From invasive species migration, to increased winter flooding, to heat waves coupled with extreme droughts in the summer months, predicted climate impacts present significant challenges to our watersheds – both urban and rural. These changes will also undoubtedly impact how communities interact with and within the natural ecosystem. But climate change also presents significant opportunities to restore ecosystems and remodel outdoor spaces to increase our resiliency.

Because the built environment generally has a design life of 40–100 years, and the urban form has even greater longevity, there is growing momentum to focus on integrated design, low impact development and natural systems as a way to reduce emissions today and plan for climates of tomorrow.

Take a green roof for example. By installing this technology now, we capture rainwater, reduce energy loads for heating and cooling, reduce urban heat island effect and establish mini-ecosystems within the built environment. With climate change, this design element becomes even more critical. Green roofs not only reduce energy use and associated emissions, but they act as effective climate adaptation strategies.

Permeable paving can also help address issues related to urban temperatures and flooding by increasing surface reflectivity and evaporative cooling, increasing rainfall permeability and reducing stormwater runoff, recharging ground water resources and providing water to surrounding vegetation (reducing the need for potable water for irrigation).

At a watershed scale, climate adaptation embraces the approach of integrated watershed management. Adaptation requires research, planning, implementation, monitoring, and reporting. By bringing together community partners, regulators, and decision makers, we can better understand the risks of climate change, identify new approaches to reduce our vulnerabilities, and establish priorities for moving forward.

Ultimately adaptation planning and implementation needs to be linked to opportunities as they occur in the community; for example, when infrastructure is being renewed or upgraded, when development or management plans are being created, or when assessments or indicator reports are being undertaken.

From a watershed perspective, protecting ecosystems, reducing vulnerabilities, and enhancing function will ultimately help us become more resilient in the face of climate change.

EcoStar Awards Recognize Central Saanich for Integrated Watershed Management

Submitted by Corporate Communications, CRD

The District of Central Saanich is the first municipality on Vancouver Island to create an Integrated Stormwater Management Plan (ISMP) following guidelines and recommendations of the BC Stormwater Planning Guidebook. The District has used innovative design approaches and best management practices (BMPs) in the ISMP to reach the goal of restoring the dispersal of rainwater flows to near predevelopment levels. The plan will substantially reduce the extent of damage caused by erosion, extreme variability of flows, degradation of water quality and required conveyance works. Started in 2007, the project included public open houses, extensive research and both short and long term implementation strategies.

The new ISMP uses holistic, innovative and cost-effective methods to capture excess rainfall. The benefits of increased rainfall capture include reducing peak flows in creeks, reducing runoff volumes and increasing summer water flow in creeks. The District of Central Saanich understands the importance of watershed management and that it is an essential component of maintaining and preserving our ecosystems.

Other 2010 EcoStar award winners include:

- Climate Action Award** - Truffles Group Inc.
- Climate Action Non-Profit Award** - Cindy Moyer for Climate Action Westshore
- Land Stewardship Award** - Tsawout Lands Advisory Committee



Jack Mar, Mayor of Central Saanich, and Roland Rochaleau of Central Saanich accept the award from Rowland Atkins of Golder Associates, award sponsor.

- Water Stewardship Award** - Mary Cooper for Mayne Island Integrated Water Systems Society
- Waste Reduction Award** - Archipelago Marine Research Ltd.
- Waste Reduction Non-profit Award** - Fairfield Gonzales Community Association
- Youth Leader Award** - Caleigh Inman
- Community Environmental Leader Award** - Debra Morse (Organic Islands Festival and Sustainability Expo).

Need to get rid of old paint or pesticides?

When it comes to disposing of unwanted paint or pesticides and other chemicals, always follow the disposal rules on the label and never pour unwanted portions down the drain, into storm drains or onto the ground. In the CRD, you can dispose of many pesticides and other household hazardous waste items for free at:

Hartland Landfill and Recycling, #1 Hartland Avenue

Tel: 250.360.3030

Ellice Recycle, 524 David Street

Tel: 250.386.4342

Alpine Disposal & Recycling, 1045 Dunford Avenue

Tel: 250.474.5145

Or call the CRD Hotline at 250.360.3030



What's in the water at Elk Lake?

Submitted by Marilyn Fuchs
CRD Parks

Have you ever walked the trail along the north side of Elk Lake, between the lake and Brookleigh Road? If you were there during the wet season, you may have noticed some rusty-coloured stains in the soil, and what looks like an oily sheen at various spots along the trail. You may have wondered what they were. You may even have been concerned that there was some kind of pollution - maybe an oil spill or a sewage leak.

If so, worry no more. These are entirely natural phenomena. It turns out that the soil there is rich in iron, which gets transported to the surface by groundwater during the wet season - hence the rusty-looking stains. A bacterium called *Leptothrix discophora* gets energy by oxidizing iron and manganese; when the bacteria die and decompose, the iron and manganese from their bodies can create a thin film that looks like oil. If you poke a stick into this sheen, it will break apart and stay broken. Petroleum, on the other hand, would swirl back together.

We thank Erwin Dyck from the Vancouver Island Health Authority for helping us diagnose these conditions. For more information about different kinds of aquatic phenomena, see <http://www.umaine.edu/waterresearch/FieldGuide/>



Links

CRD Environmental Sustainability - www.crd.bc.ca/es

CRD Stormwater, Harbours and Watersheds Program - www.crd.bc.ca/watersheds

Bowker Creek Initiative - www.crd.bc.ca/watersheds/protection/bowker/

CRD Regional Parks - www.crd.bc.ca/parks

Harbours Atlas - www.harboursatlas.ca

Natural Areas Atlas - www.naturalareasatlas.ca

District of Central Saanich - www.centrialsaanich.ca

Gorge Waterway Education Centre - www.worldfish.org

Are you doing work to protect and restore watersheds in our region?

Contact the editor to submit your story for the next issue of Watershed News:

625 Fisgard Street, PO Box 1000, Victoria BC V8W 2S6 - stormwater@crd.bc.ca or call 250.360.3256