



# SHWPnews

Stormwater, Harbours, and Watersheds Program | Spring 2009 : Issue 10



## Who Are We?

The Stormwater, Harbours & Watersheds Program (SHWP) works with municipalities and the community to maintain healthy watersheds and protect the near shore receiving environment.

## Inside this Issue

**Page 1:** Survey of Knowledge of Stormwater, Harbours and Watersheds in the CRD

**Page 4:** Looking into the watershed to save Swan Lake

**Page 6:** Point Ellice House Shoreline Restoration

**Page 7:** Water use outdoors: the sustainable choice

**Page 8:** It's a Grassroots movement and It's Growing - PURE Workshops

## Results from the Watersheds Survey

Submitted by Brianne Czypyha,  
Environmental Science Officer, CRD

In December 2008, the Capital Regional District Stormwater, Harbours and Watersheds program (SHWP) contracted NRG Research Group to conduct a survey of 900 homeowners in the capital region. The survey was conducted to gain insight into residents' knowledge of and impact on the watershed in which they reside. The findings of this survey will guide the development of a watershed outreach and education strategy.

### Knowledge of Watersheds

Most residents of the CRD are familiar with the term "watershed." Eighty-seven percent reported that they are somewhat or very familiar with the term. Despite this high level of knowledge, only four-in-ten residents know what watershed they actually live in, for example, many Victoria residents thought that they reside in the Sooke River watershed.

CRD

Making a difference...together



Dodecatheon, commonly called shooting star because of its flower, is a plant native to our region.

Survey article continued...

**Did you know** Greater Victoria’s municipal drinking water supply catchment area, the Sooke Reservoir, is within the Sooke River Watershed. The drinking watershed is a protected area, where the only residents are fish and wildlife. The Sooke Reservoir is the source of municipal drinking water from Sooke to Sidney.

### Spills into Stormdrains

If a resident were to witness a spill or discharge into a stormdrain, 42% indicated they would contact their respective municipality, while 30% said they would contact the CRD.

**Did you know** if a spill is witnessed, the proper course of action would be to contact the municipality if the spill was small (less than 100L) and to contact the Provincial Emergency Program (PEP) for spills larger than 100 L call 1.800.663.3456, which can receive calls 24 hours a day.

### Rainwater Runoff

Nearly all (90%) residents use at least one device or practice that reduces the amount of runoff leaving their property. As shown in figure 1, the most common things residents do is to minimize the amount of impervious surfaces, garden with native plants, disconnect or redirect downspouts, and have a pervious driveway. Nearly one-in-five (17%) of residents currently use a rain barrel while an additional 30% have considered using this device.

The main reason residents are hesitant to install some of these devices is cost, in fact, 39% think that the cost would be too much. Twenty-four percent of respondents do not see any benefit to such devices. In addition, one-in-ten residents report that they do not know enough about the practices of the devices to employ them.

**Did you know** allowing rainwater to infiltrate on your property helps to recharge groundwater aquifers. By decreasing runoff, there is less erosion and flooding downstream, which helps to reduce the impacts on fish and riparian habitat, as well as aging stormwater infrastructure.

Figure 1. Devices or Practices that Minimize Runoff

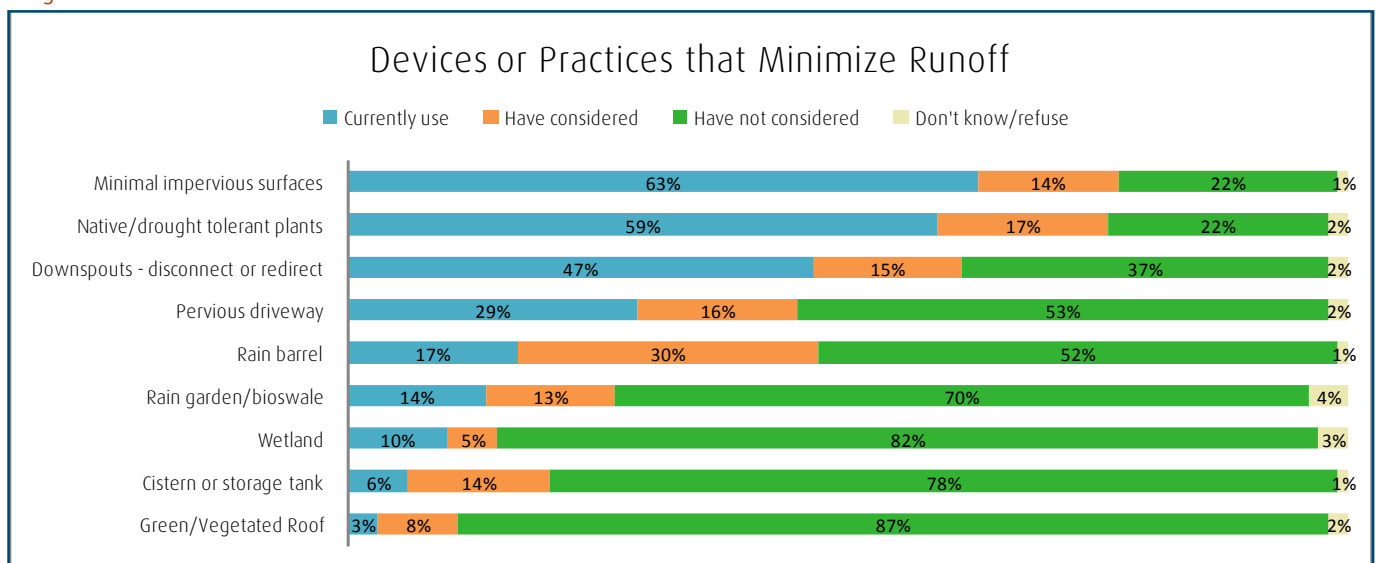
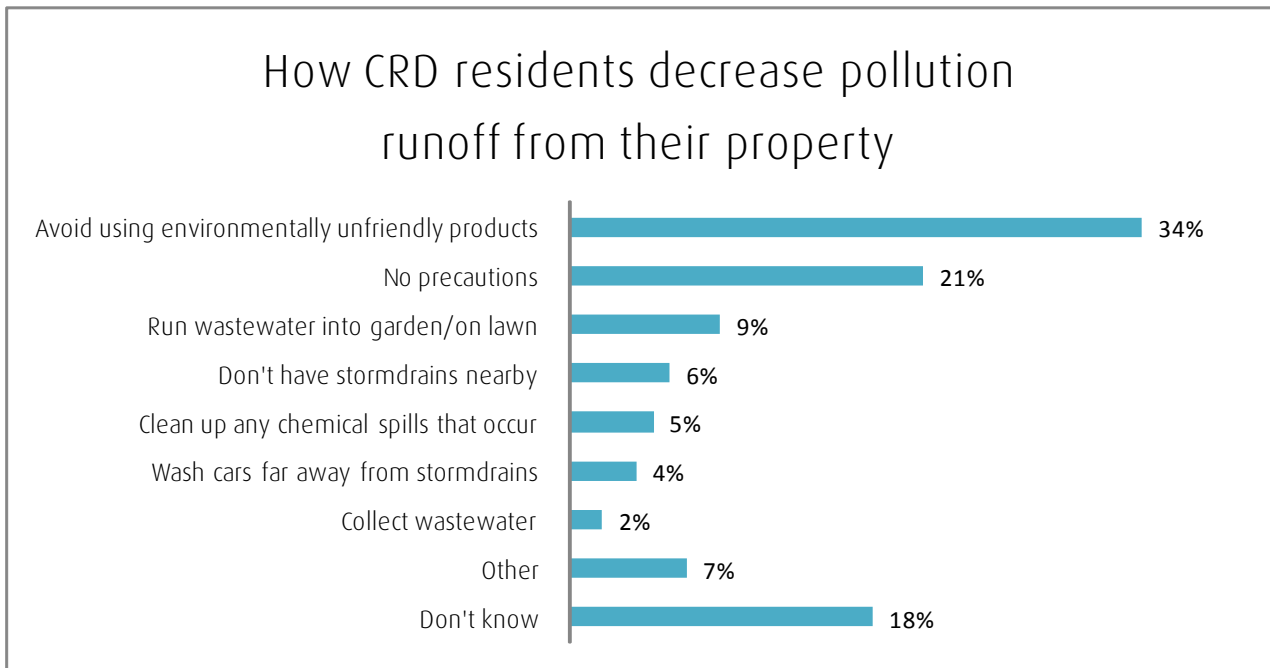


Figure 2. How CRD residents decrease pollution runoff from their property.



### Preventing Pollution

Residents partake in various activities on their property that can affect their local watershed yet many take no precautions to reduce their impact. As seen in figure 2, the activities most frequently done by residents that can adversely affect local watersheds include exterior painting (34%), using fertilizers (33%) and washing their cars with automotive soaps (31%). On average, residents wash their cars in their driveway once every two months. While 21% do not take any precautions to ensure that products they use on their property do not run off into the stormdrains, about one-third (34%) of CRD residents say that they only use environmentally friendly soaps or chemicals.

**Did you know** there are many ways for residents to reduce pollution entering watersheds: drive less, maintain your car to eliminate fluid leaks, take your car to a car wash that recycles water, inspect your heating oil tank for leaks, take the pledge to go pesticide free (see PURE article on page 8) and ensure all household chemicals are disposed of properly – call the CRD Hotline at 250.360.3030 for more information.

### Impervious Surfaces and Invasive Plants

Although the largest proportion of residents' properties is dedicated to trees, shrubs and gardens, there is a high incidence of invasive or foreign plants. Nine-in-ten (90%) residents have some form of invasive or foreign plant on their property with almost half having Ivy (48%) and Holly (47%). Excluding buildings, on average, trees, shrubs and gardens cover 41% of residents' properties while grass and hard surfaces account for 34% and 18% respectively.

**Did you know** reducing the amount of invasive plant species on your property and increasing the amount of native plants helps to encourage biodiversity and provides valuable habitat for birds and wildlife. Native plants require less maintenance, and once established they are tolerant to drought and pests, reducing the need for watering and chemicals.

### Watershed Workshops

Survey respondents indicated they would be interested in attending workshops about watersheds. In fact, seven-in-ten (70%) resident said they were interested in at least workshop, the most popular being 'Reducing The Impact on Your Watershed From Your Residence' (39%), 'How To Build a Native Plant Garden' (34%), 'Rain Barrel Installation and Use' (34%).

**Low Impact Development Rainwater Management Workshop**  
**Date and Location: TBA**

For more information and a detailed listing of CRD public workshops, open houses and events visit: [www.crd.bc.ca/publicmeetings.htm](http://www.crd.bc.ca/publicmeetings.htm) or call 250.360.3030 for more information.

# Looking to the Watershed to Save Swan Lake

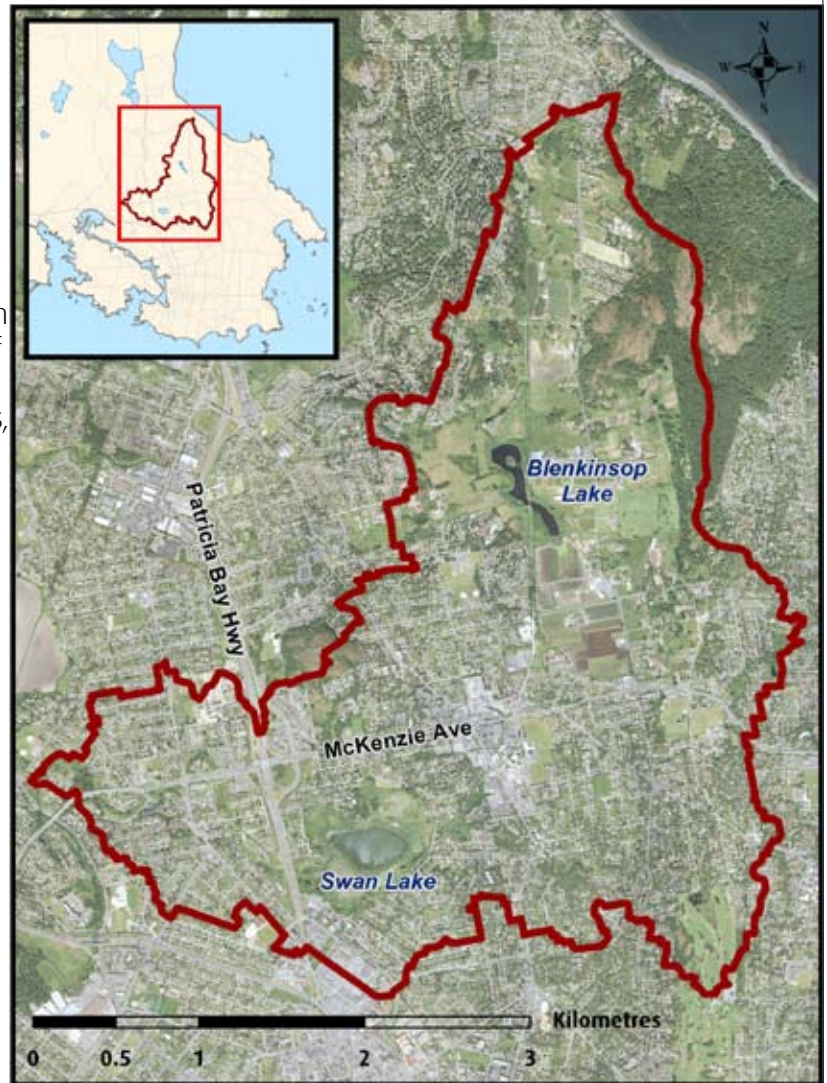
Submitted by Lise Townsend,

## Deceptive Beauty

Swan Lake lies within a well known nature park in the municipality of Saanich. Generations of children have visited the nature centre and fed the ducks from the floating boardwalk, and each year around 70,000 people of all ages enjoy the walking trails, bird watching and educational programs at this urban oasis. But all is not well below the tranquil surface of the lake. Degraded water quality, unhealthy streams and invasive species are some of the main problems, many of which arise from sources far from the lake itself, in the watershed (a basin of land that drains rainwater to a common point). The Swan Lake/Swan Creek watershed is 12 km<sup>2</sup> in size, and includes the Blenkinsop Valley and the west slopes of Mt. Doug.

## A Look into the Past

Several large wetlands were once present in the watershed in areas south of Blenkinsop Lake, at the current site of the Saanich Public Works Yard, and immediately across the Patricia Bay Highway from Swan Lake. These wetlands were dominated by woody shrubs and trees such as willow, crabapple, alder and hardhack, with a large variety of herbaceous species like skunk cabbage and sedges. They helped to maintain water quality by absorbing excess nutrients and precipitation, and releasing water in the dry summers. The terrestrial landscape in the watershed was a mosaic of Dougl's-fir forest and larger areas of Garry oak ecosystems. In the early days, residents of the nearby areas fished for trout and swam in the clear waters of Swan Lake, and salmon spawned in Swan Creek.



The Swan Lake Watershed



## The Watershed Today

Like in most cities, development in the watershed involved clearing native vegetation, draining wetlands and converting streams to ditches and stormwater pipes that convey water off the land. In the past, rainwater was mostly caught by vegetation, filtered and cleaned by the soil, whereas today about 25% of the watershed is covered in impervious surfaces like roads and roofs that shed water in “flash floods” each time it rains. This leads to stream channel erosion, and transports pollution such as heavy metals and nutrients (from roadways, lawns and agricultural lands), into local streams and lakes. In excess of 2.3 tonnes (2300 kg) of phosphorus is estimated to flow into Swan Lake per year, compared to healthy lakes that receive only several kg annually. If you visit Swan Lake in mid-summer you will see thick mats of algae floating on the lake surface as a result of this nutrient loading; this creates turbid water and depletes oxygen such that many fish (like trout) cannot survive.

## What Can be Done?

We can't bring back most of the native forest and wetlands, so to improve water quality and habitat, we need to mimic the function of the historic landscape. This can be accomplished by reducing impervious areas, and by protecting and establishing “green infrastructure” such as urban forests, constructed wetlands, buffers along streams, rain-gardens, bioswales, green roofs and permeable pavement. These systems help to hold water on the land and filter out contaminants, while sequestering carbon, providing habitat and aesthetic benefits, and cooling the air through evaporation. Such ecosystem services are important for human health and well-being, particularly in the face of uncertainties and disturbances like climate change. For example, even though tree cover in the Swan Lake watershed has been much reduced, the air pollution removed by the urban forest has an estimated value of \$152,000 annually, in avoided health care costs. Awareness of the importance of urban ecosystems is therefore needed, to empower people to make a difference, for example by participating in restoration activities,

forgoing fertilizers and pesticides, and other actions listed on the CRD Harbours and Watersheds website.

The watershed concept helps to reveal both the complexity of the concerns, as well as opportunities for improving ecological health. With a concerted and long-term effort, Swan Lake and its creeks may once again support trout and salmon, and development could improve, rather than degrade, the health of the landscape.



A kayaker on Swan Lake paddles through the thick algae mats floating on the lake.

**Lise Townsend works as an environmental consultant, and is completing a Master's thesis regarding the ecological health of Swan Lake Watershed, at the University of Victoria. For more information about this study or about these issues in general, you may contact her at: [lisetown@telus.net](mailto:lisetown@telus.net).**

## Garden for Wildlife at the 14th Annual Native Plant Gardening Sale and Demonstration.

**When:** Saturday and Sunday, April 18-19, 10am to 3pm **Where:** Swan Lake Christmas Hill Nature Sanctuary, 3873 Swan lake Road

For more information call **250.479.0011**



Oct. 2007



Nov. 2008



Mar. 2009

## Point Ellice House Shoreline Restoration

Submitted by Jody Watson, Harbours and Watersheds Coordinator, CRD

The Gorge Waterway Initiative (GWI) is working on a major project to restore native vegetation along 90 m of shoreline at Point Ellice House, near Bay Street bridge. This important restoration site, located on a diverse natural shore with pocket beaches and rocky outcrops along the Gorge Waterway, is a unique remnant of the natural arbutus, Douglas fir, Garry oak forest ecosystems that historically lined its shores. The objectives of the restoration project are to:

- Remove invasive plants
- Replant native tree, shrub and ground cover
- Improve the biodiversity and ecological functioning of the site.

Many of the mature trees on this site are nearing the end of their life and the woodland understory is severely overgrown with invasive plants (mainly ivy, holly, spurge laurel and periwinkle), which have choked out most of the native shrubs, young trees and ground cover. Dense stands of overhanging ivy at the waters edge crowd out marine marsh plants significantly impacting the tidal fringe marsh that used to exist along the shore. Decades of invasive species growth has resulted in a loss of habitat diversity and has compromised the ecological functioning of the site.

In 2008, the partners worked with a fantastic group of community volunteers and supporters on the removal of invasive species from the site (see side bar). From August to December, our generous volunteers spent a total of 930 hours to remove more than 10 tonnes of invasive plants from the site. With this level of community involvement and volunteer commitment, significant progress on the removal of invasive plant species was achieved.

The three images above depict the before and after of an area at Point Ellice House. where volunteers removed invasive plant species. The last image shows the area recently replanted.

## Our thanks to Point Ellice Volunteers

### Community Volunteers

- 3rd Douglas Sea Scouts
- Esquimalt High School Leadership and ESCAPE programs
- University of Victoria students
- Camosun College students
- Community Service Workers
- Numerous local residents

### In-kind Supporters

- City of Victoria Parks staff
- Ellice Recycling
- Heritage Branch
- Point Ellice House staff

### Financial Supporters

- Evergreen Walmart Green Grant
- Capital Regional District.
- Diageo Canada

**Are you interested in becoming a volunteer?**

**Contact Jody at 250.360.3065 or email [info@gorgewaterway.ca](mailto:info@gorgewaterway.ca)**

**[www.gorgewaterway.ca](http://www.gorgewaterway.ca)**



The intake tower at the Sooke Reservoir.

## Wise Outdoor Water Use: The Sustainable Choice

Submitted by Deborah Walker, Demand Management Coordinator, CRD

There is a perception, even in Victoria, that we are water rich all year because we usually have abundant rainfall in the fall and winter months. However, it is important for everyone to remember that we only have as much water as our reservoir can hold. This water must meet our needs for the whole year including our summer months when water use almost doubles.

This last winter (2008-2009) has been the second driest winter on record since 1895. In fact, since September of 2008 we have received only 55% of our average rainfall. While no one is going without water we must be vigilant in using it at a sustainable rate both this year and for the future.

In Canada and indeed across North America we know that outdoor water use rises by approximately 30% - 50% of normal winter usage during the summer months. In Greater Victoria our summer water

use doubles. To put this in perspective, in our region the average winter water use is approximately 123 million litres or 27 million gallons of water per day. In the summer we have on occasions reached 318 million litres or 70 million gallons per day. This outdoor water use puts tremendous seasonal pressure on our water supply, which consequently puts strain on infrastructure capacity and the Sooke reservoir.

The bulk of this enormous summer outdoor water use increase is used for lawn watering. We know that irrigated lawns require five times more water than other landscape plants and although turf is the least expensive planting initially, in the long run it takes far more in maintenance, time and cost than other plantings, not to mention the drain on outdoor water use.

Efficient use of our water is an important component of sustainability and CRD Water Services has numerous programs and resources that can help everyone to adopt water conserving habits and technologies. For more water conservation information and materials contact CRD Water Services' Demand Management division at 250.474.9684 or look visit CRD's website at [www.crd.bc.ca/water](http://www.crd.bc.ca/water).

Reducing outdoor water use only requires some thought and simple planning. **Follow these tips to reduce your outdoor water use:**

- If you water your lawn remember it only needs a maximum of 2.5 cm (1") per week including rainfall. Remember to water only in the morning or evening according to the CRD watering bylaw dates and times.



- Lawns normally go into a summer dormancy when regular rainfall decreases and temperatures increase. They stop growing and often turn golden. This is a normal process and does not mean the lawn will die.

- Examine all garden areas to make sure that plantings are grouped according to water requirements. You may need to move or adjust plantings to make their water needs match, but placing water guzzlers next to water sippers is wasteful.

- When watering plants, water around the base of plants slowly and deeply - moistening the top 10 to 15cm (4 to 6 inches) of soil.





## It's a Grassroots Movement, and It's Growing - PURE Workshops

Submitted by Teresa Waddell,  
Coordinator - Roundtable on the Environment, CRD

Are you interested in learning to work with natural processes to create a healthy, vibrant lawn and garden?

Would you like to learn how to make a gourmet salad from your own backyard? This spring and summer the Capital Regional District (CRD) and other proud sponsors are offering residents two upcoming workshop series on organic gardening and lawn care and organic food gardening, as well as an information session on permaculture.

The CRD's Roundtable on the Environment (RTE) has been committed to pesticide use reduction for over a

decade, and through the development of the Pesticide Use Reduction Education (PURE) working group, continues to offer residents educational opportunities to help them practice natural, healthy and environmentally conscientious lawn and garden care. The PURE working group brings together a wide range of community partners, including the majority of CRD municipalities and electoral areas (Victoria, Saanich, Esquimalt, Oak Bay, Sidney, Metchosin, View Royal, Central and North Saanich, Highlands, Salt Spring Island and the Southern Gulf Islands), the Capital Regional District, the Islands Trust, the Canadian Cancer Society and other community organizations.

For more details and to register for upcoming workshops visit: [www.crd.bc.ca/workshops](http://www.crd.bc.ca/workshops). If you do not have internet access, call **250.360.3051**.

Are you a pesticide free gardener or want to be? Show your support and take the pledge to go pesticide-free at **[www.crd.bc.ca/takethepledge](http://www.crd.bc.ca/takethepledge)**.



## Links

CRD Environmental Services - [www.crd.bc.ca/es](http://www.crd.bc.ca/es)

CRD Stormwater, Harbours and Watersheds Program - [www.crd.bc.ca/watersheds](http://www.crd.bc.ca/watersheds)

CRD Water Services - [www.crd.bc.ca/water](http://www.crd.bc.ca/water)

Harbours Atlas - [www.harboursatlas.ca](http://www.harboursatlas.ca)

Natural Areas Atlas - [www.naturalareasatlas.ca](http://www.naturalareasatlas.ca)

PURE - <http://www.crd.bc.ca/rte>

Swan Lake Nature Sanctuary - <http://swanlake.bc.ca>

Gorge Waterway Initiative - [www.gorgewaterway.ca](http://www.gorgewaterway.ca)

## Contact the Editor

If you have any questions or comments or would like to contribute material to this newsletter, please contact the editor:

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

**[stormwater@crd.bc.ca](mailto:stormwater@crd.bc.ca) or call 250.360.3256**