

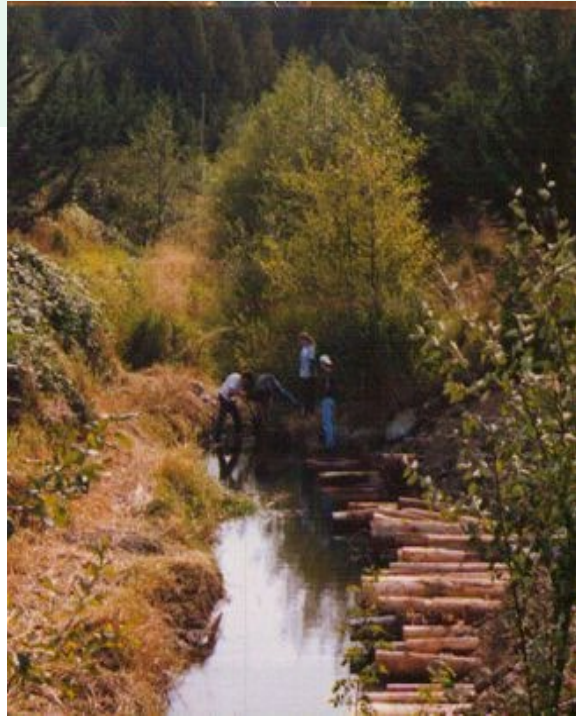
A photograph of a wooden bridge spanning a stream in a lush forest. The bridge is made of dark wood and has a simple railing. The stream is surrounded by rocks and fallen branches, and the water reflects the surrounding greenery. The forest is dense with trees and ferns, creating a vibrant green scene.

# Bilston Watershed Habitat Protection Association

**Alison Leduc, BWHPA President**

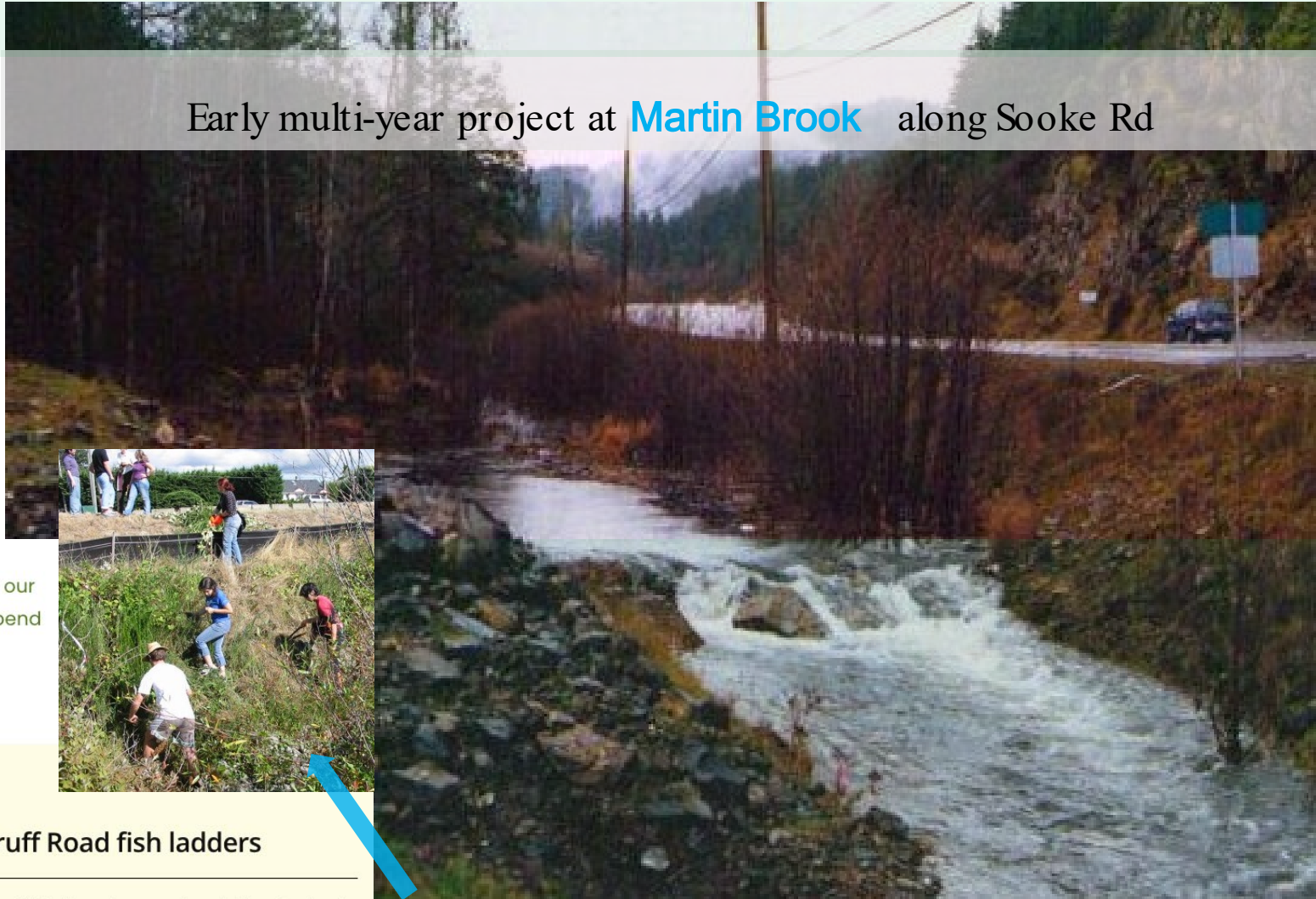
**visit us at [bilstonwatershed.org](http://bilstonwatershed.org)**

# About BWHPA: Bilston Watershed stewards since 1991



Bilston Creek enhancements off **Winter Road** to stop erosion and protect spawning beds

**BWHPA past projects** We've taken on some major projects over the years to enhance our creeks and streams, and to protect the fish and wildlife that depend on them. Here are just a few:



Early multi-year project at **Martin Brook** along Sooke Rd



**Woodruff Road fish ladders**

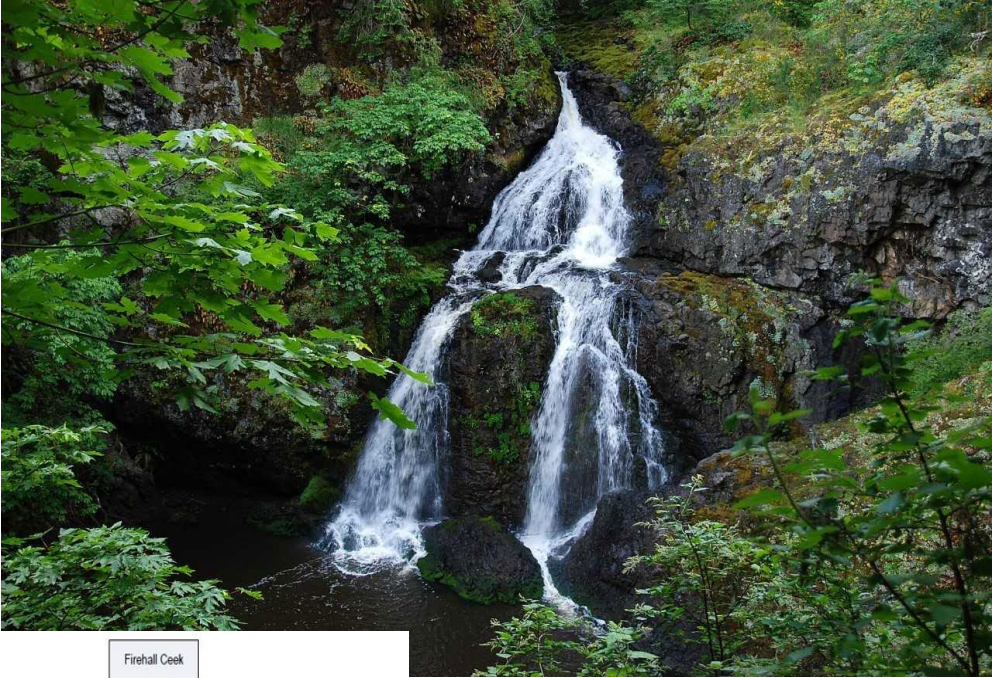
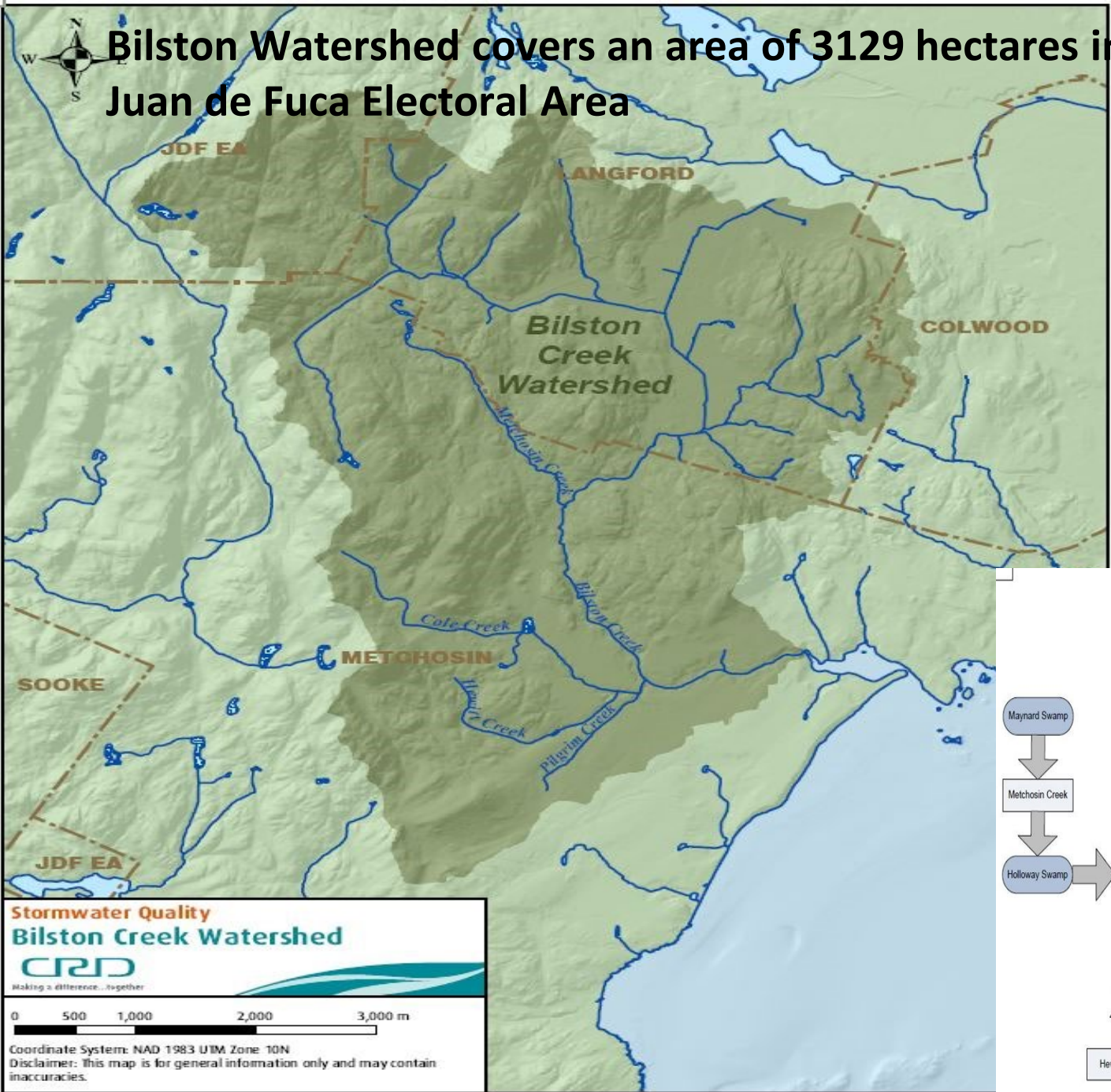
Constructing a fish ladder at the corner of Woodruff Road and Sooke Highway #14 to allow fish to swim beyond a small dam that went across the stream.

[Learn more](#)



Two-year restoration project on **Firehall Creek** to remove invasive species, get native plants established in riparian area and build riffles to aid spawning trout

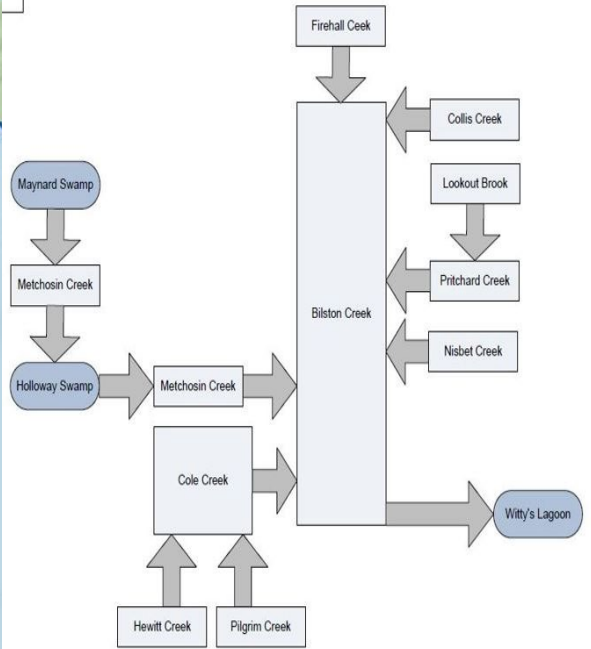
**Bilston Watershed covers an area of 3129 hectares in Langford, Metchosin, Colwood, and the Juan de Fuca Electoral Area**



**Stormwater Quality  
Bilston Creek Watershed  
CRD**  
Making a difference... together

0 500 1,000 2,000 3,000 m

Coordinate System: NAD 1983 UTM Zone 10N  
Disclaimer: This map is for general information only and may contain inaccuracies.



**CRD flow diagram shows how the wetlands, brooks & creeks flow through to Sitting Lady Falls in Metchosin**

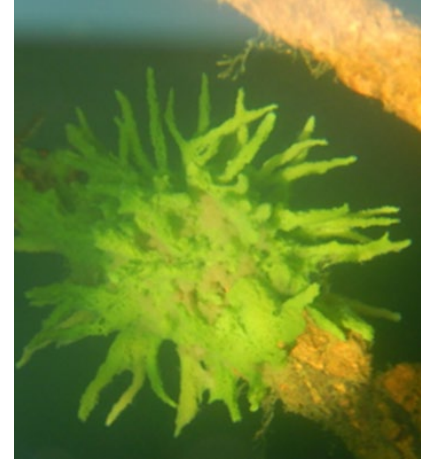


Western water shrew



**Fairy shrimp** need vernal pools and ephemeral wetlands to survive.

**Freshwater sponges** filter and clean the creek water.



## There's a rich biodiversity of species in Bilston Watershed.

Our watershed is home to red- and blue-listed species including Coastal Cutthroat Trout (CCT), Blue-Grey Taildropper Slugs, Northern Red-Legged Frogs & tiny Sharp-tailed Snakes.

### Blue-grey taildropper slug



CCT are an indicator species. If conditions are good for CCT, we know many other species can survive. In 2023, we found young CCT in Bilston, Metchosin, Pritchard and Hewitt Creeks, although drier, hotter summers, reduced baseflow, sediment and other contamination are severely challenging the population.





**Streamkeepers course**



**Ongoing surveying and sampling of aquatic life in our waterways**



**Propagation workshop**

**Provincial biologists & volunteers survey and sample Coastal Cutthroat Trout**



**Joined Langford's 2023 Earth Day celebrations at Willing Park to remove invasive plants near Bilston Creek**

# A few of the agencies, organizations and groups we're working with now:



Peninsula Streams Society

Pacific Streamkeepers Federation

Freshwater Fisheries Society of BC

Habitat Conservation Trust Foundation

World Fisheries Trust/Coastal Collaborative Sciences

BC Wildlife Federation

UVic Community-Engaged Learning Office

UVic Community Research Partnerships Office

SFU Action on Climate Team

BC Ministry of Environment

BC Ministry of Transportation

City of Langford

District of Metchosin

Capital Regional District

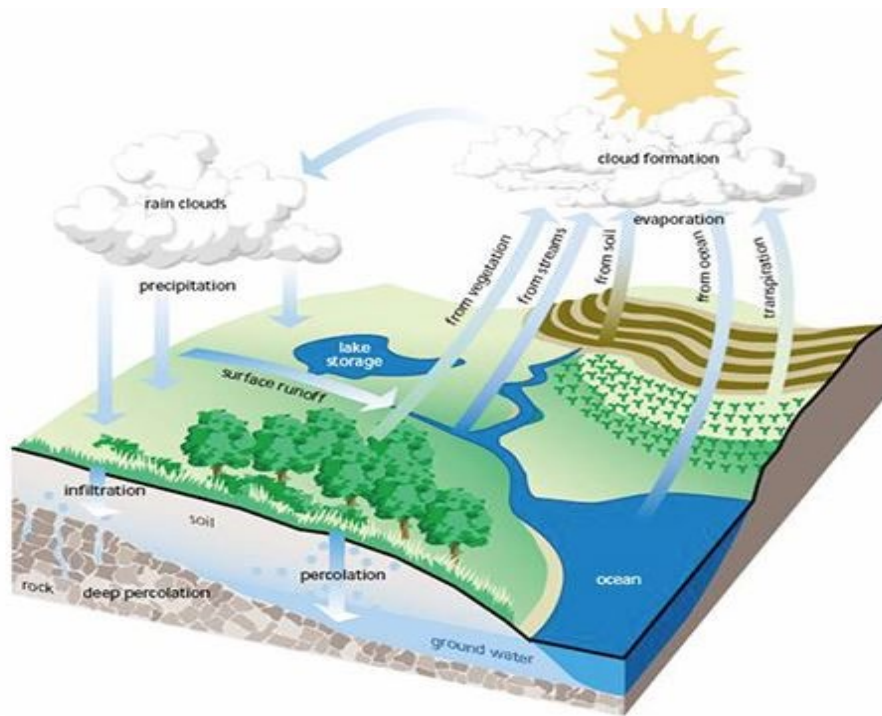
Power to Be Victoria

The Land Sharing Network

Metchosin 4-H

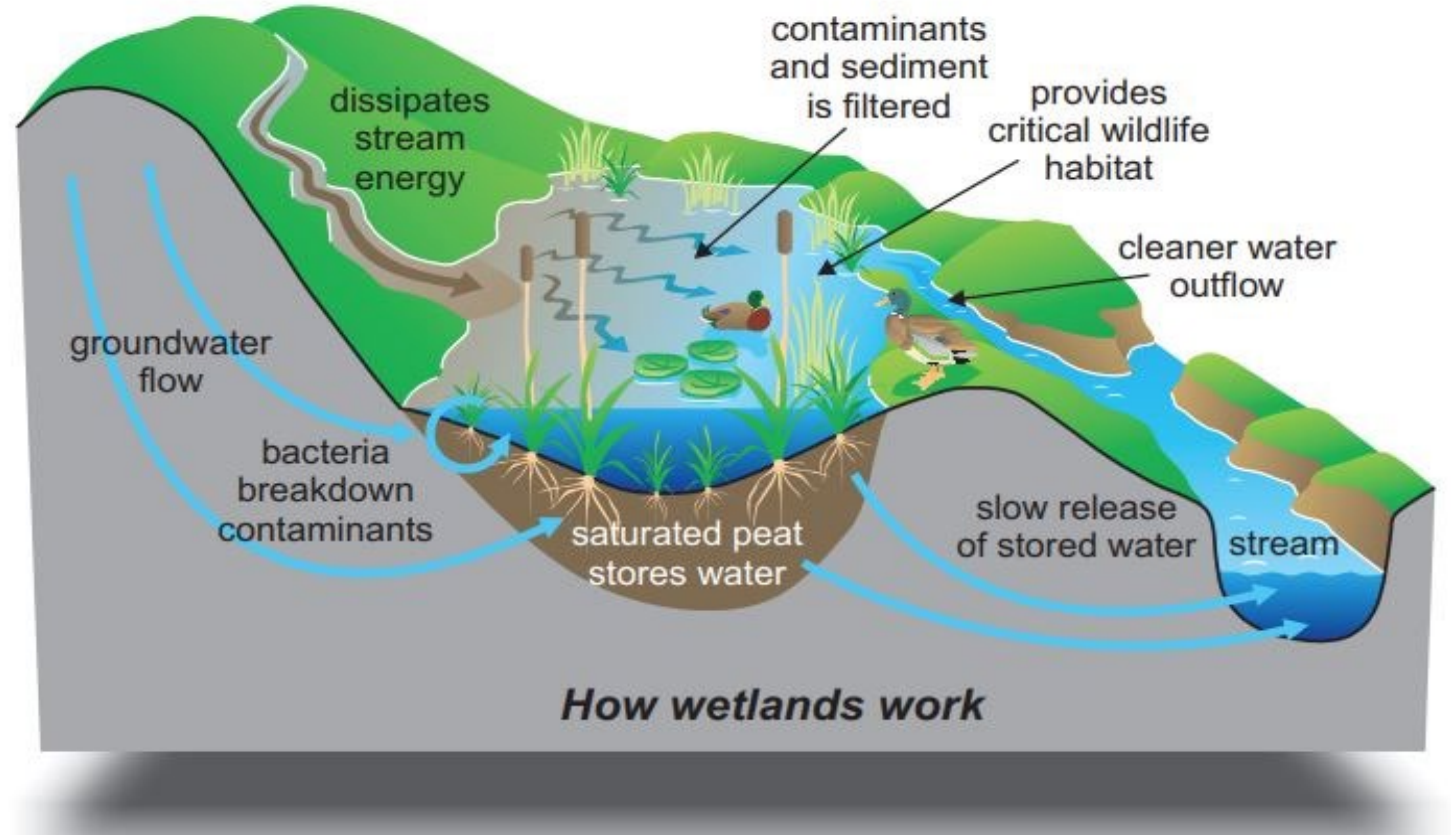
# The incalculable wealth of healthy wetlands and aquifers.

Wetlands are sometimes referred to as “nurseries” because so many animals begin their lives within them.

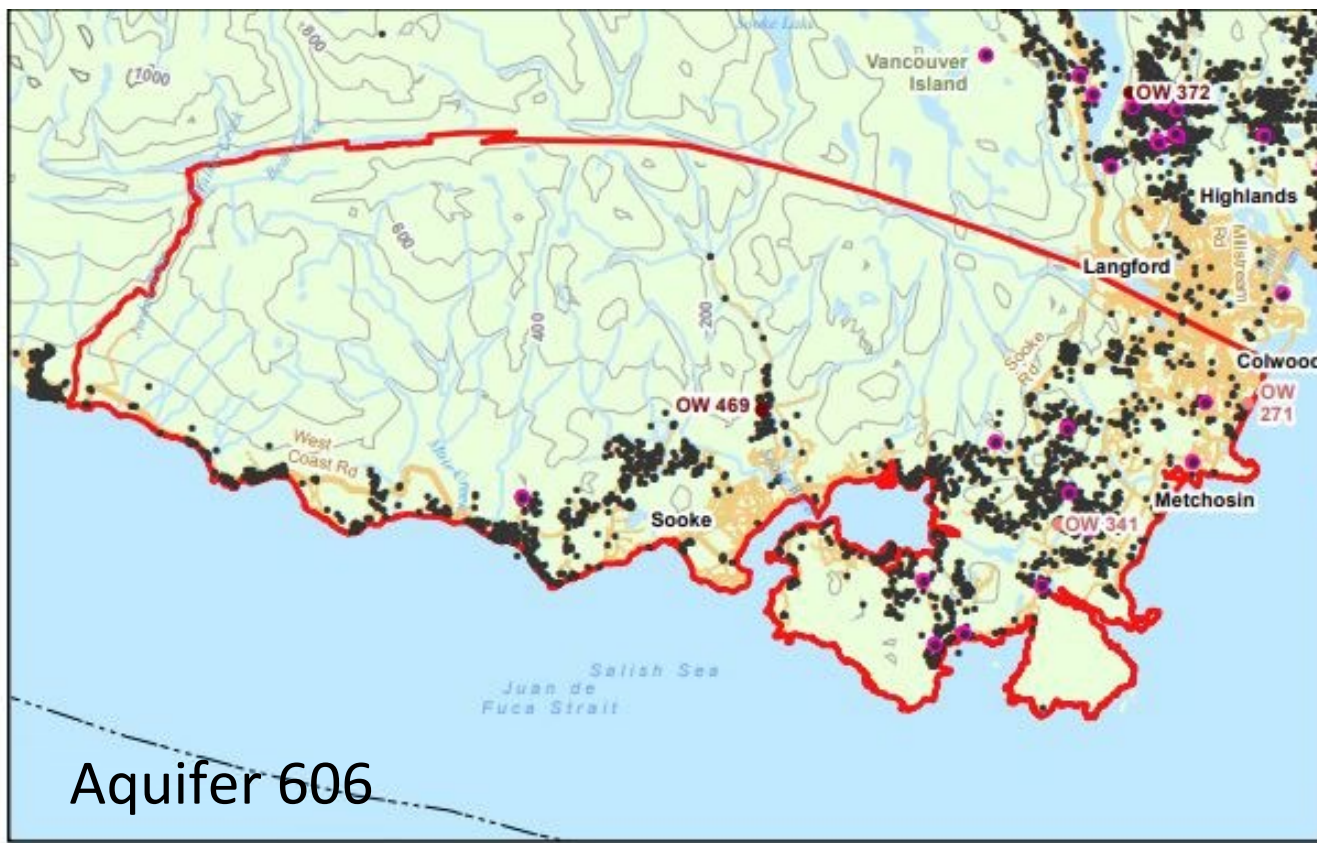


## Wetlands: nature's sponge and filter

Wetlands swamps, marshes, bogs, and fens provide many services. They filter stream waters, store water, and offer critical habitat for many plants and animals. Wetlands fill with water during rains and slowly release water through droughts. Before we understood their critical role, we used to ditch and drain wetlands to create lawns, pastures, or farms.

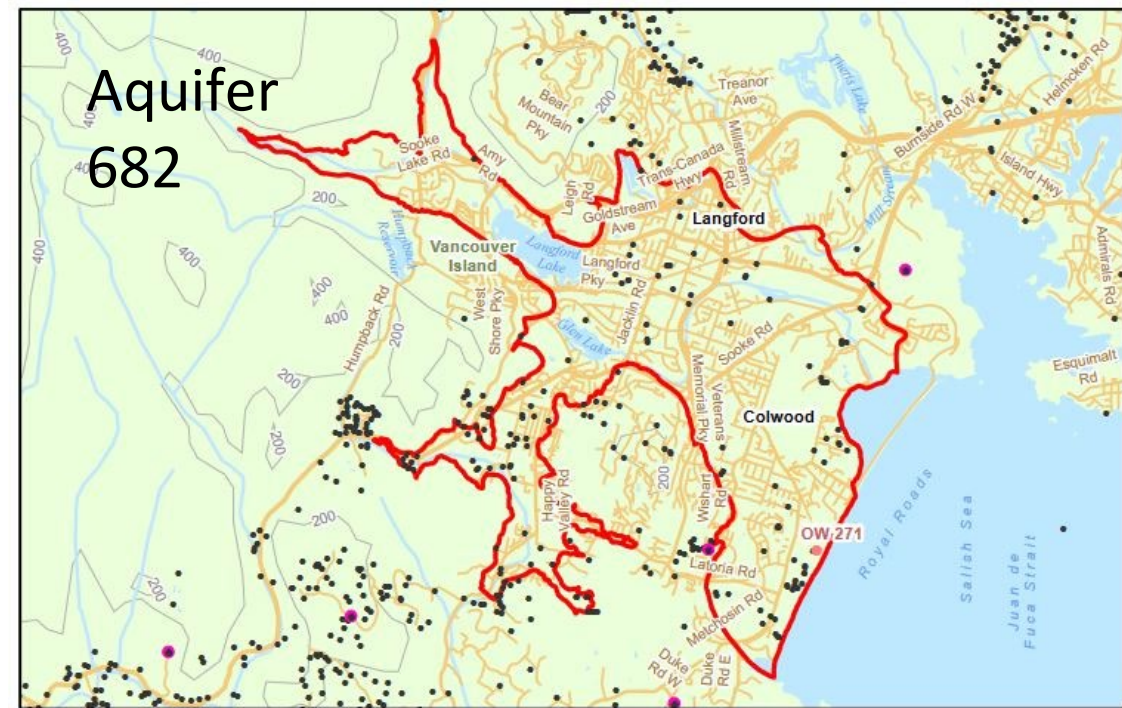


Wetlands remove pollutants, prevent flooding, and provide thermal regulation and water storage when allowed to act as sponges. On top of all that, they provide vital habitat for animals and plants.

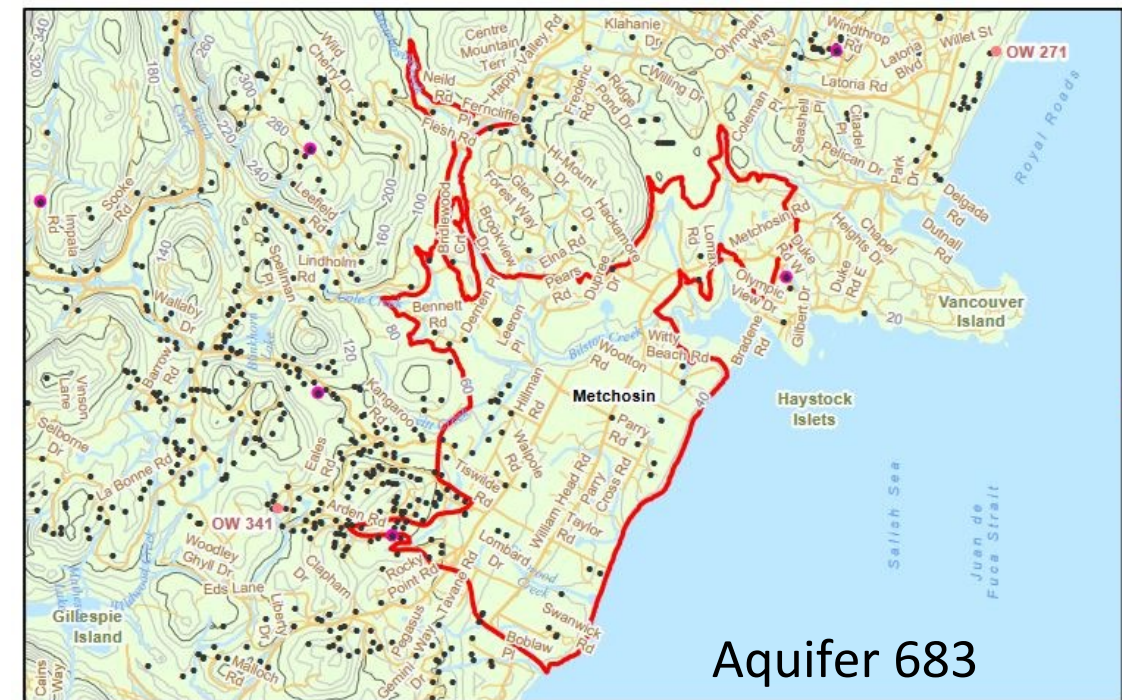


Aquifer 606

There are 3 different aquifers underlying Bilston Watershed. Aquifer 606 is the source of water for over 1550 wells in the Langford, Metchosin and Sooke area. It's ranked as "highly vulnerable to contamination". Recharging an aquifer can take days, years, centuries or even millennia, and we need to ensure that sufficient clean water gets absorbed into the ground for recharge.



Aquifer 682



Aquifer 683



**We need to think of rainwater as a resource, not a waste product.**



**Peninsula Streams project**



Green infrastructure requires less maintenance over time, saving costs.



**Peninsula Streams project**

Urban landscapes can be designed to filter, absorb, clean and store water through the use of green infrastructure, low impact development, and integrated stormwater management plans.



# What Is a Rain Garden?

A rain garden is a landscaped area that collects, absorbs, and filters stormwater runoff from roof tops, driveways, patios, and other hard surfaces that don't allow water to soak in. Rain gardens are sized to accommodate temporary ponding after it rains and are not meant to be permanent ponds. Simply put, rain gardens are shallow depressions that:

- Can be shaped and sized to fit your yard.
- Are constructed with soil mixes that allow water to soak in rapidly, treat runoff, and support plant growth.
- Can be landscaped with a variety of plants to fit the surroundings.

## Anatomy of a Rain Garden



Streams and creeks close to roadways are particularly vulnerable to pollutants such as 6PPD-Q and other contaminants from tire wear particles, hydrocarbons, heavy metals and road salt.

Bioswales are designed to both remove rainwater accumulating on roadways (making the roads safer to drive on) and filter runoff contaminants.



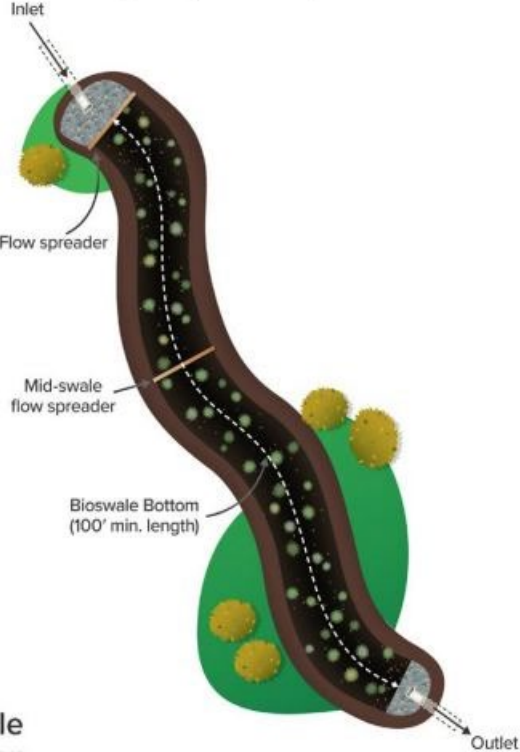
Runoff from roads filtered by engineered soil mixes and plants reduces pollutants from entering stormwater infrastructure and receiving waters.



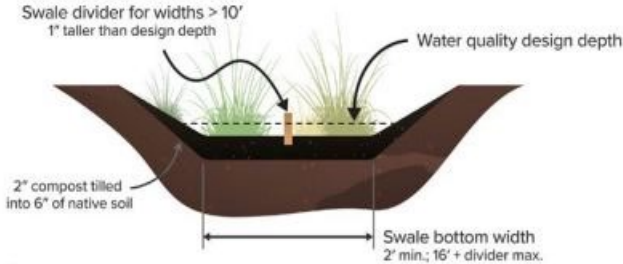
Bioswale diagram by Andrew Mack, Washington State University

**What is a bioinfiltration swale?**

A bioinfiltration swale is a stormwater conveyance system that moves water from one place to another while allowing for infiltration and treatment. The swale consists of an excavated channel for stormwater with a gentle downgradient slope. There is vegetation planted on the channel bottom and sides. Bioinfiltration swales are an excellent alternative to standard ditches or traditional piped stormwater conveyance systems because they are designed to move water to locations that can handle excess stormwater while simultaneously treating and infiltrating the water as it moves through the swale.



**Typical Swale Cross Section**



\*Not to scale.

Illustration by Andrew Mack, Washington State University

Figure 2. Anatomy of a bioinfiltration swale<sup>2</sup>

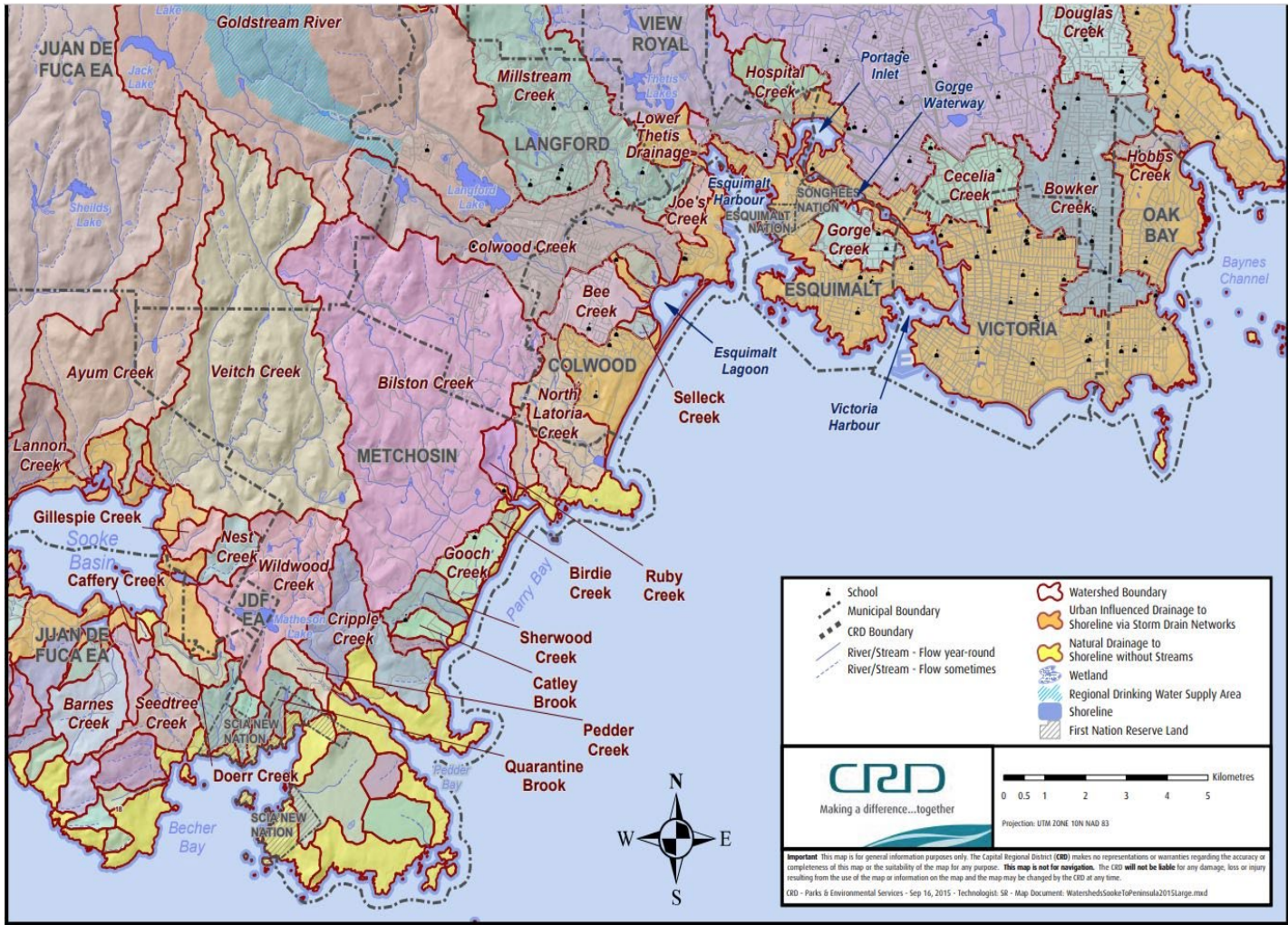


Extensive flooding in Happy Valley and Walfred Road areas in the fall of 2021



The use of green infrastructure and preservation of wetlands can effectively reduce storm damage.

# Comox Lake Watershed Protection



## BOWKER CREEK WATERSHED MANAGEMENT PLAN



JANUARY 2003



Planning at the watershed scale integrates decisions about land use planning, water & ecosystem protection, economic development, climate mitigation and climate adaptation. Watershed planning initiatives are underway across BC. With the emphasis on increasing density and climate change bringing more frequent droughts and more likely flooding, it's more important than ever to design a watershed protection plan that supports all life in the watershed.

# Bilston Watershed Habitat Protection Association



Thank you for your time!  
Visit us at [bilstonwatershed.org](http://bilstonwatershed.org).

Our thanks for providing photos, videos, diagrams and maps to:

The Capital Regional District  
Peninsula Streams Society  
Washington State Department of Ecology  
Government of British Columbia  
Dylan Simpson  
Bev Hall  
Scott Harris  
Gary Schroyen  
Ian McKenzie  
Washington State University Extension