

Wetlands Update



The newsletter of the
B.C. Wildlife Federation's
Wetlands Education Program

2022 Edition



Students laying out the wetland liner at Mackenzie Secondary School.

Trifecta of Wetlands in Mackenzie

In 2021 the Wetlands Education Program (WEP) spent 10 days in Mackenzie to build an educational wetland at Mackenzie Secondary School, provide wetland restoration training in collaboration with McLeod Lake Indian Band, and host a planting event at the schoolyard wetland at Morfee Elementary School.

The educational wetlands at Mackenzie Secondary School and Morfee Elementary School provide outdoor learning labs for STEM education (Science, Technology, Engineering, and Mathematics). These schoolyard wetlands give students unparalleled opportunities to investigate animals, plants, soils, and water through hands-on, experiential learning right on their school grounds! 1150 locally sourced native plants were installed between the two wetlands.

Over 60 students at Mackenzie Secondary School were involved in aspects of the wetland build to instill a sense of ownership and stewardship of the project. They helped smooth the wetland basin by removing rocks and sharp objects, measure the wetland area, and install the over-500 pound liner!

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A Space For 'Wetworking'

Mark your calendars for 2022 workshops and keep up to date through social media and the "Bog Blog"



Wetlands Institute

The Wetlands Institute is an intensive 7-day hands-on workshop that educates participants about wetland stewardship, restoration, and construction. Participants come to the Wetlands Institute with a project they wish to implement in their home communities, whether it be restoration, protection, enhancement, or an educational project. During the workshop, participants receive support from knowledgeable experts and obtain hands-on training to successfully implement their wetland projects in their community.



Left: Neil Fletcher discussing wetland protection. Middle: Restoration site on Denman Island. Right: Participants at Laughlin Lake restoration site on Galiano Island.

The 19th annual Wetlands Institute was hosted from October 2 - 8, 2021 across the Comox Valley & Gulf Islands, including stops in Cumberland, Courtenay, Denman Island, Victoria, and Galiano Island. Participants ranged from a diversity of backgrounds including environmental consultants, community educators, biologists, landowners, ENGO staff, and arborists. A main attractant for many participants is the workshop's commitment to hands-on-training, including multi-step involvement in wetland restoration projects. Participants gained experience with site assessments, restoration designs, working with heavy machinery, and invasive species prevention management with two restoration projects, which you can read about on the next page.



The Wetlands Institute Participants posing with the Wetlands "W" at the Galiano Conservancy Native Plant Nursery.

Training was delivered by 23 experts from various fields. Just a few of the topics covered included:

- *Eco-asset Approach to Wetland Restoration*
- *Wetland Mapping, Delineation, and Classification*
- *History of Wetland Drainage in North America*
- *Amphibian Monitoring*
- *Watershed Management with Beavers*
- *Community Engagement*
- *Kus-kus-sum Estuary Restoration Project*
- *Legal Frameworks and Local Tools for Protection*

Wetlands Institute Restoration Projects



Invasive Scotch broom removal at the Denman Island Provincial Park Butterfly Reserve.



Heavy machinery restoring wetlands at Cedars for the Next Century.

Denman Island Provincial Park Butterfly Reserve

0.13 hectares of wet meadow habitat was constructed to support the endangered Taylor's checkerspot butterfly (*Euphydryas editha taylori*). Participants learned about site design, soil texturization, and restoration techniques specific for wet meadows and ephemeral (seasonal) wetlands.

Cedars for the Next Century

Led by the Galiano Conservancy Association, this watershed level project aims to restore cedar swamp ecosystems, which are at high risk of being lost due to impacts of climate change. Participants installed over 80 plants with deer-browse cages to protect the new wetland vegetation and tried their hand at the unique Millard Tree Pulling Technique, which uses a system of pulleys to manually uproot trees which are then used as habitat features in the wetlands.

Wetlands Institute Speaker Series

The Wetlands Institute Speaker Series is a series of stand-alone webinars and workshops on topics for those working in the environmental sector and wetland practitioners in conservation, restoration, and education around wetlands.

In partnership with the Wetlands Workforce, WEP hosted the second Wetlands Institute Speaker Series. Throughout the month of November, four webinars were hosted with 12 knowledgeable speakers and experts in their fields who presented on the following topics:

- Wetland Hydrology & Climate Vulnerability
- Wetland Predictive Mapping
- Bats: Introduction to Species, Ecology, Roosts and Acoustics
- eDNA Metabarcoding & Wetland Effectiveness Monitoring

Recordings from the 2021 Wetlands Institute Speaker Series are available on WEP's YouTube page and will continue to be freely available to the public so that anyone who wishes to learn about wetlands can!



Scan me to watch the recordings!

This series drew 402 participants from across B.C. and Canada, allowing a much larger audience to be reached than traditional workshops

Wetlandkeepers

Over 2.5 days, Wetlandkeepers workshops educate participants about wetland conservation and provides them with technical skills to steward the wetlands in their own backyards. Each course is uniquely tailored to the host community, and topics such as wetland classification, mapping, soil sampling, and vegetation identification are part of the basic structure.



Left: Dragonfly at Rithet's Bog. Middle: Soil texturization in Victoria. Right: Chickadee nest with eggs.



Chawathil Elder, Carol Peters, shares her knowledge on the medicinal uses of wetland plants.

Dragonflies & Citizen Science

The Victoria Wetlandkeepers was jam-packed with amphibian monitoring, macroinvertebrate dips, plant identification, and learning about native pollinators and birds! There was a special focus on wetland stewardship and citizen science. A highlight of this workshop was touring Rithet's Bog and seeing the many dragonflies depend on this wetland! Dragonflies are sensitive to disturbance, and are great indicators of the health of a wetland. Unfortunately, with more wetlands being lost, these little creatures are facing a high risk of extinction.

Native Plant Walk & Talk

The Chawathil Wetlandkeepers was hosted during a scorching summer weekend, but that did not stop participants and speakers from giving it their all. WEP was honoured to have Chawathil First Nation Elder, Carol Peters guide us on a native plant walk and talk. She shared her knowledge on wetland plants and their uses for food and medicine, and the Halq'eméylem names of those plants.

For example... St. John's Wort can be used for anxiety and depression, but when preparing an oil from this plant, it must sit in the sun or window for a total of 1,000 hours or 3 months!

Map our Marshes

Map our Marshes is a 1-2 day crash course that teaches the value and tools of community mapping and inventory of wetlands. This information will help communities identify conservation needs at a wetland or watershed scale and share their data publicly with other interested parties. Unless wetlands are identified and mapped, they could go unrecognized and be inadvertently destroyed by agriculture, development, ranching, or invasive species.



Testing out new GPS skills around the wetland.



Assessing the health of a wetland.



Doig River Map our Marshes participants in the wetland.

Wetlands Health Assessment

At the Doig River Map our Marshes, participants practiced their newly learned mapping and GPS skills by racing to answer trivia questions to complete a scavenger hunt that led to interesting features within the wetland! They also practiced conducting wetland health assessments. This is an invaluable tool for identifying threatened wetlands and prioritizing conservation efforts. Originally informed by Alberta Cows and Fish Lentic Wetland Health Assessment Tool, the BCWF's Wetland Rapid Health Assessment provides a quick, accurate and inexpensive method of evaluating the health and functionality of a wetland. Participants practiced assessing multiple wetlands on their territory and can continue to identify sites that have been heavily disturbed and are unhealthy or at-risk.

Mapping with Smartphones

In addition to in-person workshops, WEP hosted a 1-day virtual Map our Marshes in August. Participants learned how to delineate wetland boundaries and were introduced to free, accessible mapping technologies. Applications such as Avenza, Gaia, and Google Earth are all powerful tools that can be used to map wetland attributes and boundaries while out in the field!

Did you know?

Chewing on willow branch (a common wetland plant) can help relieve headaches, fever, and coughing. It also works well when made into a tea.

- Jack Askoty, Doig River Elder

Outreach & Education

In addition to training adults, the Wetlands Education Program attends outreach events, hosts public talks, and visits schools to teach the public (especially kids) about the exciting world of wetlands! This year WEP provided outreach, both in-person and virtually, to almost 250 youth.

Naturalist Ambush Outreach in Squamish

In early July, WEP hosted an educational booth at Squamish's downtown estuary as a part of the Squamish River Watershed Society's socially distant "Ambush Outreach" Event.

The WEP team shared their knowledge on the importance of wetlands using activities such as an interactive watershed model that demonstrates how wetlands filter water and prevent flooding and drought. Families also enjoyed playing "Wetland Bingo" as they learned about wetland vegetation while exploring the estuary!



The Wetlands team showing off the booth at the Squamish Ambush Outreach Event.



The Situation Room

The Wetlands Situation Room is a virtual outreach activity that is facilitated by BCWF staff for students in their classroom! This activity puts students in the roles of community members, researchers, and developers that must work together to learn about wetlands and find solutions to future habitat loss.

The Situation Room can come to your classroom!

The Wetlands Education Program in partnership with the Youth Program is running the Situation Room again this year! The WEP team has also developed a variety of resources to bring the wetland to you, both in-person and virtually.

Contact wep@bcwf.bc.ca for more details.

Restoration



Left: Native plants to be installed in a restored wetland. Middle: Installing wildlife cameras at Yaqan Nukiy Wetlands (photo: Cheyenne Bergenhenegouwen) Right: Installing plants with deer browse cages on Galiano Island.

In 2021, the Wetlands Program restored a total of 30.7 hectares of wetland habitat across seven projects. Two of these restoration initiatives are described below:

Cambridge & Violin Reservoir Decommissioning

In partnership with the City of Trail and Rossland Streamkeepers, four dams were decommissioned to restore 901 hectares of wetlands, floodplains, and tributaries within the watershed of the Cambridge Creek Reservoir and Violin Lake by rebuilding 15 hectares of wetlands and streams within the reservoir footprints. This large-scale restoration project will help the city improve the health of their watershed and made the site safer for the public.

Dillon Creek Restoration & Workshop

In partnership with Friends of Cortes Island (FOCI) and Linnaea Farm Society, 0.507 hectares of wetland and riparian habitat were restored at Linnaea Farm on Cortes Island. The Dillon Creek Restoration Project was designed to improve water quality in downstream lakes, stabilize runoff from increasing high rain events, and mitigate the impact of algal blooms.

To highlight this initiative, WEP hosted a 2-day Virtual Wetlandkeepers Workshop in September. Participants explored virtual tours that showed the site pre- and post-restoration, giving them an overview of the steps taken to help enhance the water quality of the downstream lakes. Community members gained a full understanding of the project and learned more about wetland restoration and monitoring techniques. Early monitoring results have already shown wildlife observations and significant flows of sediment into the wetlands, demonstrating their success at filtering water flows into the lakes only 4 months after restoration!



Sediment being deposited from Dillon Creek into the restored wetlands. Photo: Miranda Cross

A Space for 'Wetworking'

Follow us on social media!

Facebook: @BCWFWEF

Twitter: @BCFWetlands

Join our mailing list to be the first to hear about new opportunities



Upcoming Workshops in 2022

Wetlands Institute

Grand Forks & Kootenay Boundary Area

September 19th - 25th (TBC)

Wetlandkeepers Workshops

Slocan Wetlandkeepers
June 3rd - 5th

Crawford Bay Wetlandkeepers
June 6th - 8th

Rossland Wetlandkeepers
June 10th - 12th

Armstrong-Spallumcheen Wetlandkeepers
June 15th - 17th

Map our Marshes Workshops

Chilliwack Map our Marshes
April 30th

Parksville Map our Marshes
August 20th - 21st

Other Workshops

Canal Flats Fencing Workshop
July 22nd - 24th

The Bog Blog

www.bcwfbogblog.com

A multi-layered website set up to share wetland steward experiences and knowledge on how to protect BC's remaining bogs, fens, marshes and swamps. It also features links to resources that might suit people monitoring and conserving wetlands.

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604-882-9988 ext 304



The B.C. Wildlife Federation is a province-wide voluntary conservation organisation of hunters, anglers and outdoor recreationalists, representing all British Columbians whose aims are to protect, enhance and promote the wise use of the environment for the benefit of present and future generations.