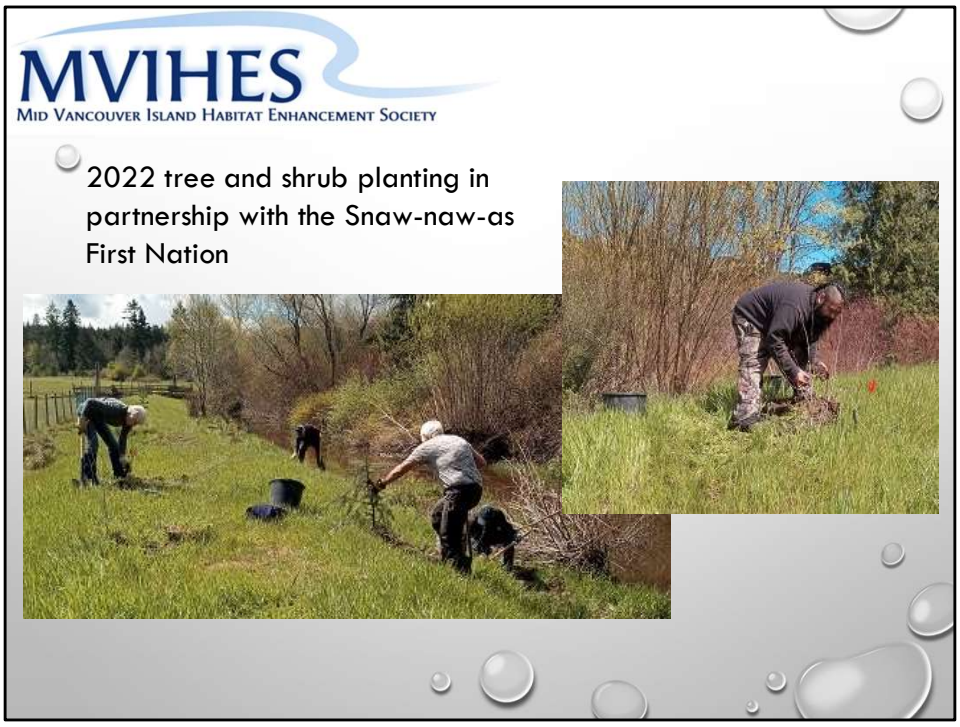
MID VANCOUVER ISLAND HABITAT ENHANCEMENT SOCIETY

MVIHES PROJECT REPORT – YEAR IN REVIEW

SEPT. 2021 TO SEPT. 2022 - HIGHLIGHTS

Our mission is the recovery of wild pacific salmon populations, and our activities focus on habitat restoration, monitoring, community engagement, and outreach and education

Reporting on habitat restoration, this time last year we had completed restoration work on a 400 m section of Shelly Creek that flows through the Shelly Farm in Parksville on Standford Ave. Decades of sediment, Himalayan Blackberry and Reed Canary Grass were removed from the creek and replaced with gravel and boulders to provide rearing habitat for coho salmon fry and smolts. Not only is the section providing rearing habitat, about 25 adult Coho were observed spawning on the gravel last fall which is great news.



In April we partnered with the Snaw-naw-as FN to complete the restoration work by planting 255 trees and shrubs along the creek bank to provide shade and cover for the fry and smolts. The Snaw-naw-as purchased and delivered the plants which included salmonberry, Pacific Nine-bark, Black Hawthorne, Douglas Fir and Western Red Cedar in 2, 5, and 7-gallon pots so these were large plants. Work was completed by 12 MVIHES volunteers and 6 Snaw-naw-as members.

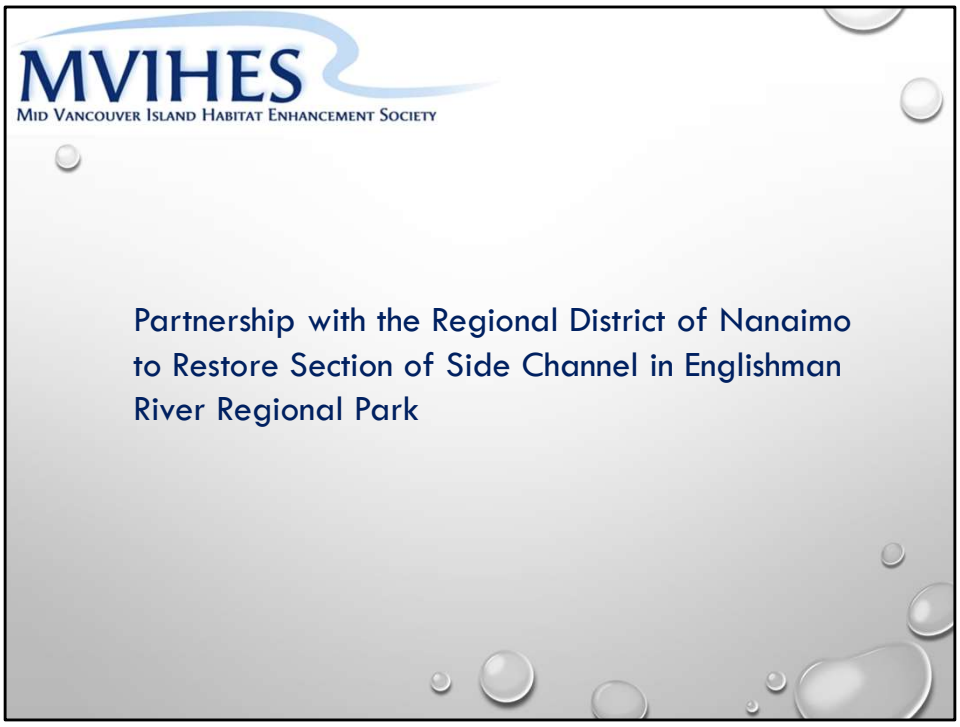
The trees and shrubs have definitely benefited from the wet spring and summer and are growing really well. Here are a Douglas Fir (left-hand photo) and Salmonberry (right-hand photo).

In August we restored another 200 m section of creek on private property next to the Shelly Farm, a continuation of the restoration work completed on Shelly Farm. The blue represents the section restored last year and the red line the section we restored this year. Martindale Pond was the site of habitat restoration in 2020. All three projects were funded by Pacific Salmon Foundation grants

This section on private land was also clogged with sediment, Himalayan Blackberry, Reed Canary Grass and even some Yellow Iris. The new stream bank will be seeded with a fast-growing erosion control grass seed mix and covered with straw to keep the seed in place. We'll be asking for volunteers to help with this.

MVIHES
Mid Vancouver Island Habitat Enhancement Society

The Snaw-naw-as provided tree stumps that were installed along the stream bank and chained to boulders to provide cover for fry and smolts and habitat for other aquatic animals. Two areas of the restored creek section contain this woody debris.



We also received a grant from the Pacific Salmon Foundation to partner with the RDN to restore some of Side Channel in the ERRP that has been damaged by overuse by people and people making their own trails through the park. The work includes installing split rail fence to keep people off the bank of the channel and planting riparian. Work has been delayed because the contractor installing the fence has a shortage of workers.

Moving on to monitoring. Every spring since 2011, we install a smolt trap to count and measure the coho smolts and fry that migrate out of Shelly Creek into the Englishman River. The lower section of Shelly Creek is an important winter rearing area for coho which is why restoration work has been focused here. Some years we have counted between 7,000 to 9,000 fish.

Since 2018, we have been monitoring our beaches for the presence of Pacific Sand Lance and Surf Smelt eggs in partnership with the MABRRI. These species of fish are the cornerstone of marine food webs as they are eaten by salmon, whales, orcas, seals, sea lions and sea birds. They lay their tiny eggs on pebble and sand beaches just below the high-tide line. Once a month and sometimes twice a month we collect sand samples from specific monitoring sites which are picked up by MABRRI who look through the samples with a microscope to determine if eggs are present. You can see eggs with tiny sand grains attached in the right-hand photo. We have found Sand Lance eggs on several of our beaches.

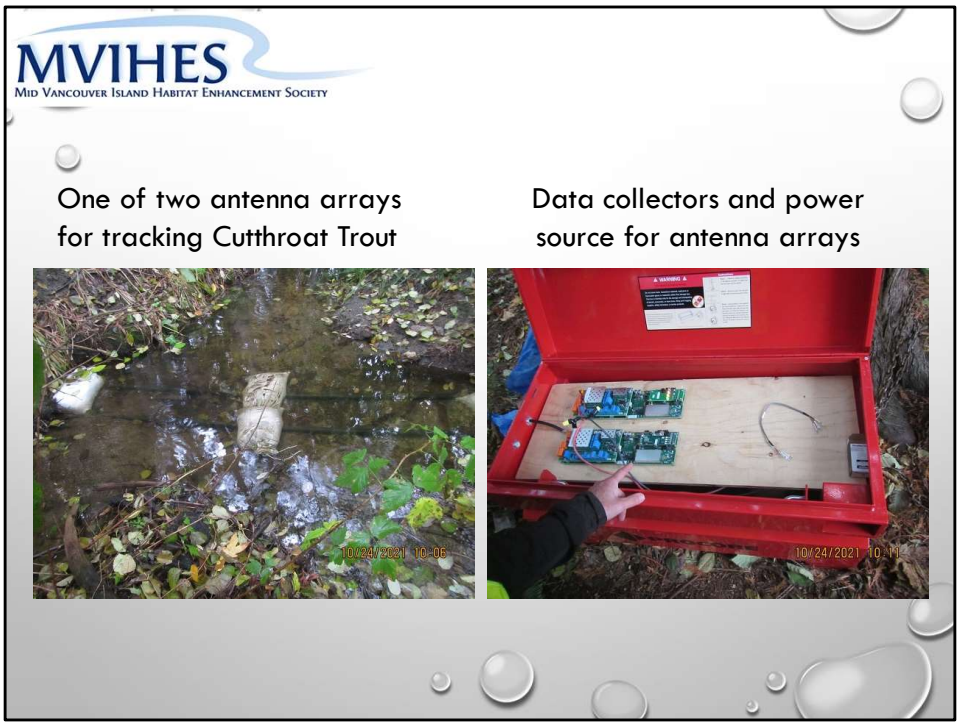
MVIHES
Mid Vancouver Island Habitat Enhancement Society

Sieving Sand Sample to Isolate Fine Sand Grains Containing Eggs

An important process in preparing the sand samples for the people at MABBRI is sieving which isolates the right sized sand grains that the eggs attach to. We are looking for volunteers to help with this process so if you are interested, please talk to us after the meeting.

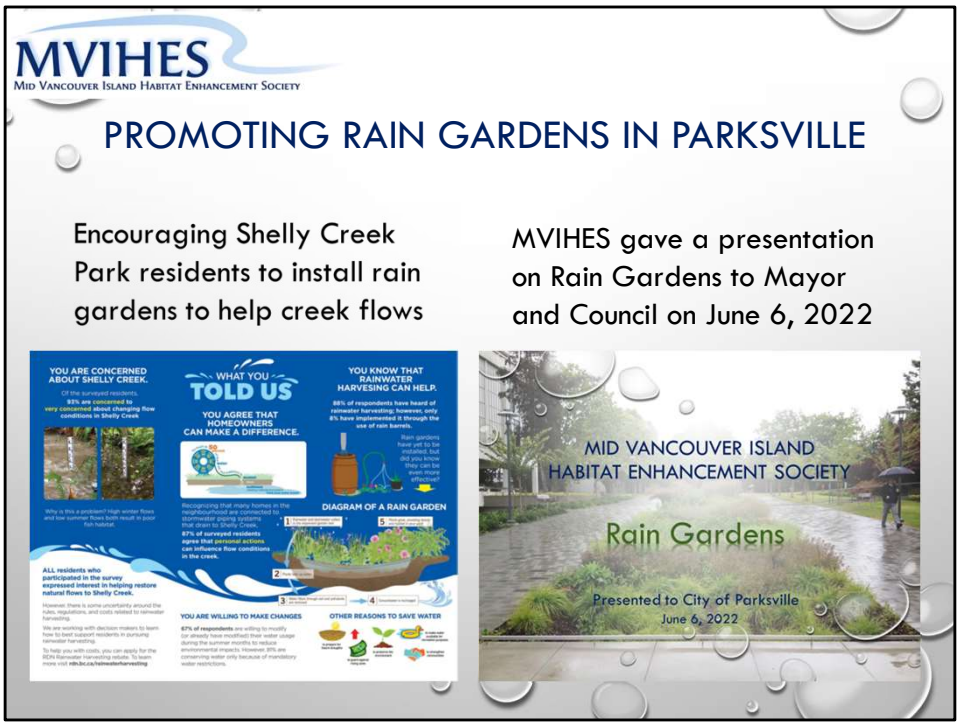
We also have 2 water sampling programs. One is conducted for Environment Canada every other Monday at the Orange Bridge. A rack containing sample bottles is lowered from the bridge into the Englishman River to collect water samples which are sent to a lab in Burnaby for analysis of parameters such as metals, bacteria, ammonia, solids. The other water sampling program is with the Regional District of Nanaimo Watershed and Drinking Water Protection program. Using meters we measure oxygen temperature, conductivity and turbidity which are important indicators for fish habitat. We have 2 teams, one monitors nine sites in the Englishman River Watershed and a second team monitors 5 sites in Nanoose, Lantzville and Craig Bay. This is done every Tues for 5 weeks in August and for 5 weeks during fall flush. We are also looking for volunteers for these sampling programs so if you are interested, please talk to us after the meeting.

We have been monitoring the movements of the resident Coastal Cutthroat Trout population that live in a section of Shelly Creek on Hamilton Ave in Parksville, in the Shelly Creek Park. The areas is outlined in the left-hand photo. PIT tags were implanted in some of the trout shown in the top tight-hand photo. Each tag contains a unique code identifying individual fish that can be read by a scanner, similar to the chip technology in your debit card. Phase 1 of this project ran from June to December 2021. It was a partnership between the MVIHES and Vancouver Island University and was led by VIU student Ally Badger as part of her undergraduate thesis. Ally used a scanner to track the movements of the trout as seen in the bottom right-hand photo.



We also installed antenna arrays in the creek that pick up and store the Pit tag codes to augment the data from the scanner. The arrays and data loggers are powered by 4 car batteries that are changed out every 10 days. In the left-hand photo you see 2 dataloggers. Beneath the board are the car batteries. The scanning results showed that most of the trout stay within a 100 m section of the creek and are restricted to a few small pools in the summer when water levels drop. This shows how their survival is tied very precariously to the water levels in the creek. MVIHES completed Phase 2 of the study between January and July using the same methods as Ally and although the data has yet to be analysed it appears there has been a decline in the population of resident fish over the past year, due to a number of reasons like predation but the primary cause we think is a result of extremely low flows in 2021.

Speaking of flows. We have been monitoring flows in Shelly Creek since 2018. We started this monitoring, because we were interested in seeing whether the flows in the creek reflected the estimates in a hydrology model and water balance study that was primarily conducted to identify the cause of severe erosion and sedimentation that has been occurring. We measured flows 31 times, in all kinds of flow conditions. Our most recent flow measurement was on September 2nd. Our data has been submitted to Ministry of Environment who are using it to help us build a better understanding of the water balance, but it also showed that Low flows coincide with a lack of movement by the cutthroat trout in Shelly Park because they're restricted to a few pools.



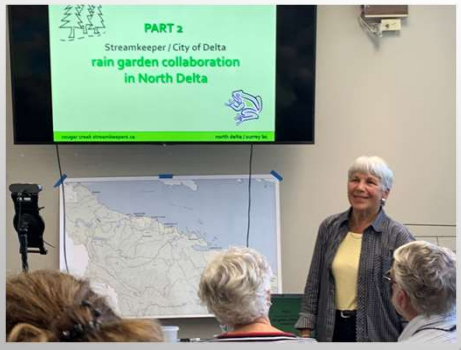
Moving on to Community Engagement You are probably aware of the importance of rain gardens for collecting rainwater off roads, parking lots and building and releasing it slowly into the ground instead of sending it directly into our creeks and rivers through stormdrains where it causes erosion and destroys fish habitat. And because raingardens slowly release water into the ground the water table is replenished which contributes to stream flow in dry periods.

Back in Spring of 2021, we started a joint project with MABRI to assess the interest of Shelly Creek residents in rainwater and flows in Shelly Creek. Through our efforts with survey-monkey, the brochure in the left-hand photo, and meeting residents at Tent Sessions in the park, we succeeded in sparking some interest in a installing a raingarden in Creekside Strata. The project has had its challenges with COVID delaying in-person interactions and some local opposition to the proposal but we're hopeful things will progress in 2023.

In June MVIHES gave a presentation to Mayor and Council on the need for rain gardens as part of the city infrastructure and buildings (right-hand photo).

MVIHES
Mid Vancouver Island Habitat Enhancement Society

Deb Jones from Delta, shows residents and City Staff the how and why to build Rain Gardens

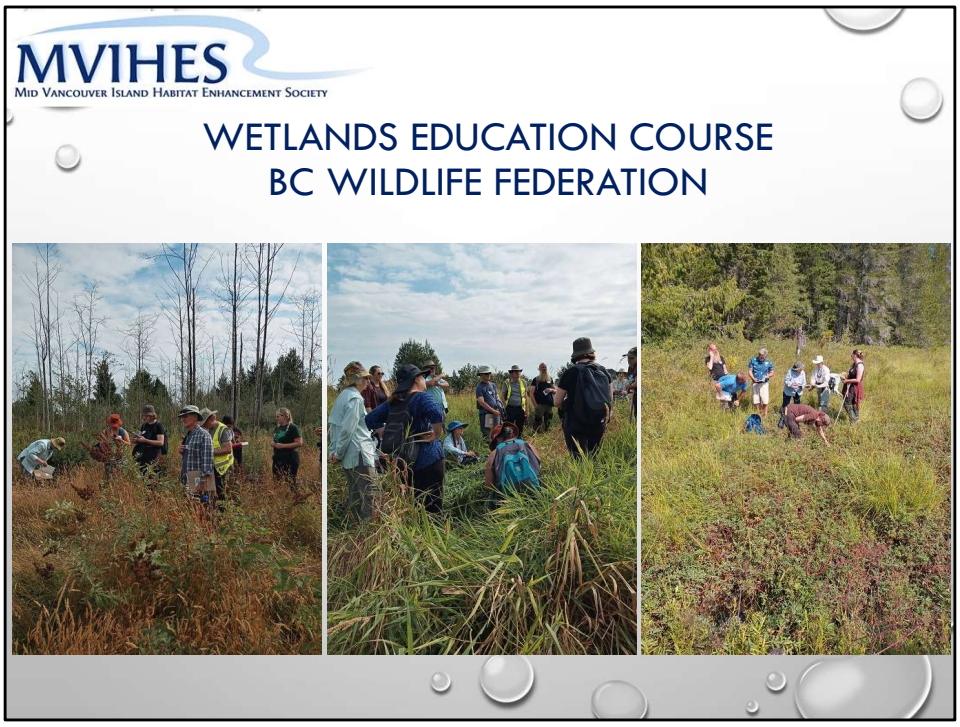


MVIHES gives the Fire Hall Rain Garden a much needed pruning several times in 2021 and 2022

. In August, MVIHES organized presentations on raingarden construction to City staff at Parksville City Hall and to the public at the McMillan Art Centre (left-hand photo) by Deb Jones, Rain Gardens Coordinator for the Cougar Creek Streamkeepers in Delta. She currently oversees the maintenance of 30 school and community rain gardens created since 2006 in collaboration with the City of Delta, Delta School District. So she's a fantastic resource for rain gardens.

And I just want to give a plug for MVIHES who over the course of a year has turned the Fire Hall Rain Garden from an impenetrable jungle that was neglected for 8 years into something resembling a garden (right-hand photo).

We would be remiss if we didn't mention the Friends of Shelly Creek Park formed had headed by Sue Wilson, who is working towards eradicating lamium, a very invasive species also known as Yellow Archangel, which has invaded the Park. Sue is not only an active MVIHES member, but also a member of ANats who are also helping with the eradication efforts along with the local residents. The lamium was also on the radar of Warren Payne, City Parks Foreman who contacted the Coastal Invasive Species Council for guidance and assistance. This has been a fantastic collaborative effort headed up by Sue. I should mention that all of our activities in Shelly Creek Park have been supported by Warren and the City which we appreciate very much.



20 MVIHES partnered with the ANats in organizing a Wetlands Education Course given by the BC Wildlife Federation in August. Our objective was to focus on educating the decision makers for land development on the role wetlands play in security of drinking water, flood control for protecting infrastructure, and conserving biodiversity. We reserved spots for and invited Parksville and QB Councillors and staff, as well as planners and engineers from the RDN to attend. Four Parksville City staff members attended the course and a councillor from QB attended the classroom session. The remaining attendees were interested citizens from as far away as Vancouver and Victoria. We visited the Parksville Wetlands, the ER Estuary and Hamilton Marsh. It was very informative for identifying what constitutes a wetland and the different wetland types so they can be recognized and conserved in development plans.

Last but not least, Education and Outreach is when we take our show on the road with our displays. That includes River Never Sleeps festival, Beach Day seen in the top left-hand photo, and promoting our Yellow Fish signs, also known as Salmon Friendly Lawn program at the MABRRI Regional Research Open House in March and at the Rivers Edge Neighbourhood Information Session in August. (bottom photos).

A very special outreach program ran this summer at the McMillan Art Centre. A Tale of One Urban Creek art exhibit showcased the story of Shelly Creek, last local waterway that bears salmon and trout populations in Parksville, through paintings, sculptures and photography seen in the top right-hand photo. (organized by MVIHES Board member Chris Smith who is also and artist and makes beautiful glass sculptures of salmon and trout). Interactive displays were in the room next door to the exhibit organized by MVIHES members Ross and Rosemary Peterson as well as 3 beach seining events down at the Community Beach. This was a great opportunity for people to gain hands on knowledge of our aquatic environments.

MVIHES
Mid Vancouver Island Habitat Enhancement Society

OUTREACH & EDUCATION

MVIHES is on YouTube

Check out our new video and subscribe to our channel.

Don’t forget MVIHES is on YouTube so check out our videos and subscribe to out channel.