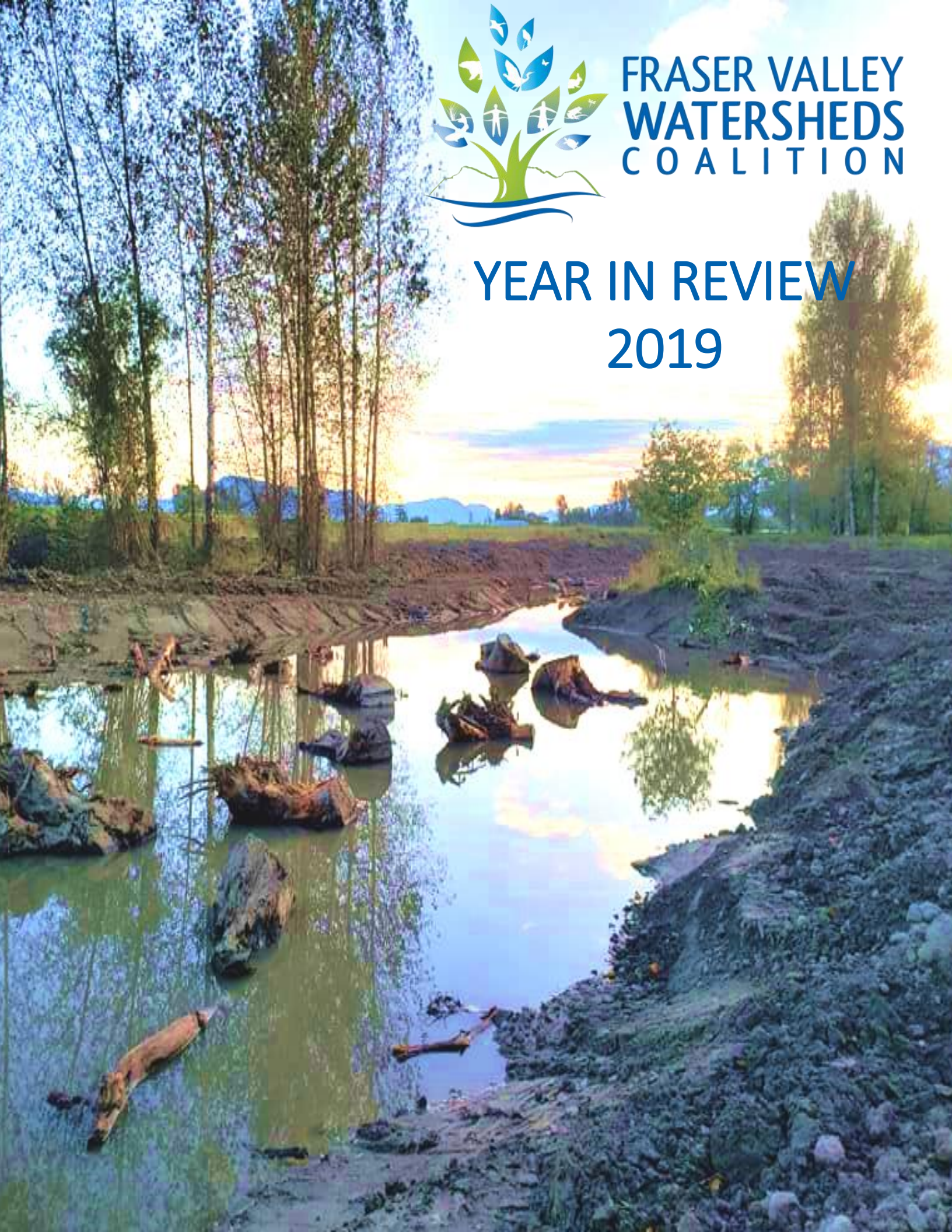




FRASER VALLEY
WATERSHEDS
COALITION

YEAR IN REVIEW 2019



The Fraser Valley Watersheds Coalition (FVWC) is a registered charity made up of individuals, groups, agencies, and First Nations. We work to promote healthy watersheds in the Fraser Valley by facilitating understanding and action in local communities.

Cover Photo: Hooge Road wetland in Chilliwack B.C constructed in the summer of 2019.

ABOUT THE WATERSHED PROGRAM

“We believe healthy watersheds provide the foundation for vibrant healthy communities”



The Fraser Valley Watersheds Program was formed in 2005 as a partnership between the Fraser Valley Regional District (FVRD) and the Fraser Valley Watersheds Coalition (FVWC) with technical support from Fisheries and Oceans Canada (DFO) Resource Restoration Unit. It is a unique and effective partnership between government and non-profit society to improve the health of watersheds in the Fraser Valley of B.C. and is funded through grants and in-kind contributions. The goal of the Watersheds Program is to restore and enhance watershed values and to increase environmental stewardship and understanding on the importance of local watersheds. Valuing a balanced approach, the Watersheds Program consists of four inter-connected Programs:

1. Habitat Restoration and Enhancement
2. Environmental Monitoring and Mapping
3. Education and Outreach
4. Watershed Planning

WHY WATERSHEDS MATTER



Photo: The joint between the Fraser River and the Harrison River.

Social Well-Being & Human Health

Healthy watersheds benefit people:

- Provide safe drinking water.
- Provide food.
- Enable us to adapt to the impacts of climate change more easily by cooling the air and absorbing greenhouse gas emissions.
- Healthy forests within a watershed create the fresh air we breathe.
- Provide places for people to enjoy nature such as lakes, parks, and trails.

Economic Prosperity

Healthy watersheds benefit society:

- Produce energy and water supply for agriculture, industry and households.
- Forests and wetlands help to prevent or reduce costly climate change impacts. This can include mitigating flooding, and reducing drought and forest fires.
- Contribute to tourism, fisheries, forestry, agriculture, and mining industries.

Ecological Health

Healthy watersheds benefit nature, natural processes, and biodiversity:

- Conserve water, promote streamflow, and support sustainable streams, rivers, lakes and groundwater sources.
- Enable healthy soils for crops and livestock.
- Provide habitat for wildlife and plants (including pollinators needed for agriculture).

MESSAGE FROM THE CHAIR

I want to thank everyone who contributed to our collective efforts over this past season to make a real impact on habitats in our Fraser Valley watersheds.

It is real to the coho salmon along the Vedder River, who will now find quiet and welcoming channels and wetlands created this past summer, through our efforts. It is real to the young eagles trying to survive their first winter, who will now have a chance due to the gift of food these salmon bestow on them. It is real for the song birds, who will next spring find new shrub thickets to shield their nests and young along the riparian areas planted by sweat and love.

What we have all accomplished this past year is real. For that, we should all be proud.

Matt Foy, Chair





Photo: Tom Berry gravel pit looking south from the newly created spawning channel that enters Starrett Pond (2019).

2019 AT A GLANCE



Photo: FVWC staff canoe native plants to the planting site in preparation for a community event.

Digging In – taking actions to restore local biodiversity and watersheds.

From January to December 2019 we:

- Planted **52,541** individual native trees and shrubs.
- Had **584** volunteers lend us their hands.
- Worked on **12** projects.
- Employed **2** full-time employees and **4** part-time field staff.
- Won the 2019 Rotary Club of Mission Midday Environmental Award.

Financially Responsible:

We received **\$721,295** in grants and service contracts for project based activities to support on-the-ground actions towards conservation and biodiversity in the 2019 fiscal year.

A coalition for conservation, we are growing roots in our communities.

Many thanks to our volunteers and donors, whom without, our efforts would not be as significant.

THANK YOU

PARTNERS, SUPPORTERS & DONORS



Chilliwack Fish & Game
PROTECTIVE ASSOCIATION



Wally Hall Jr.
Steelhead Fishing
Derby



A.D.S. Boicat & Excavating Services



No·Mi·No·U
ATHLEISURE



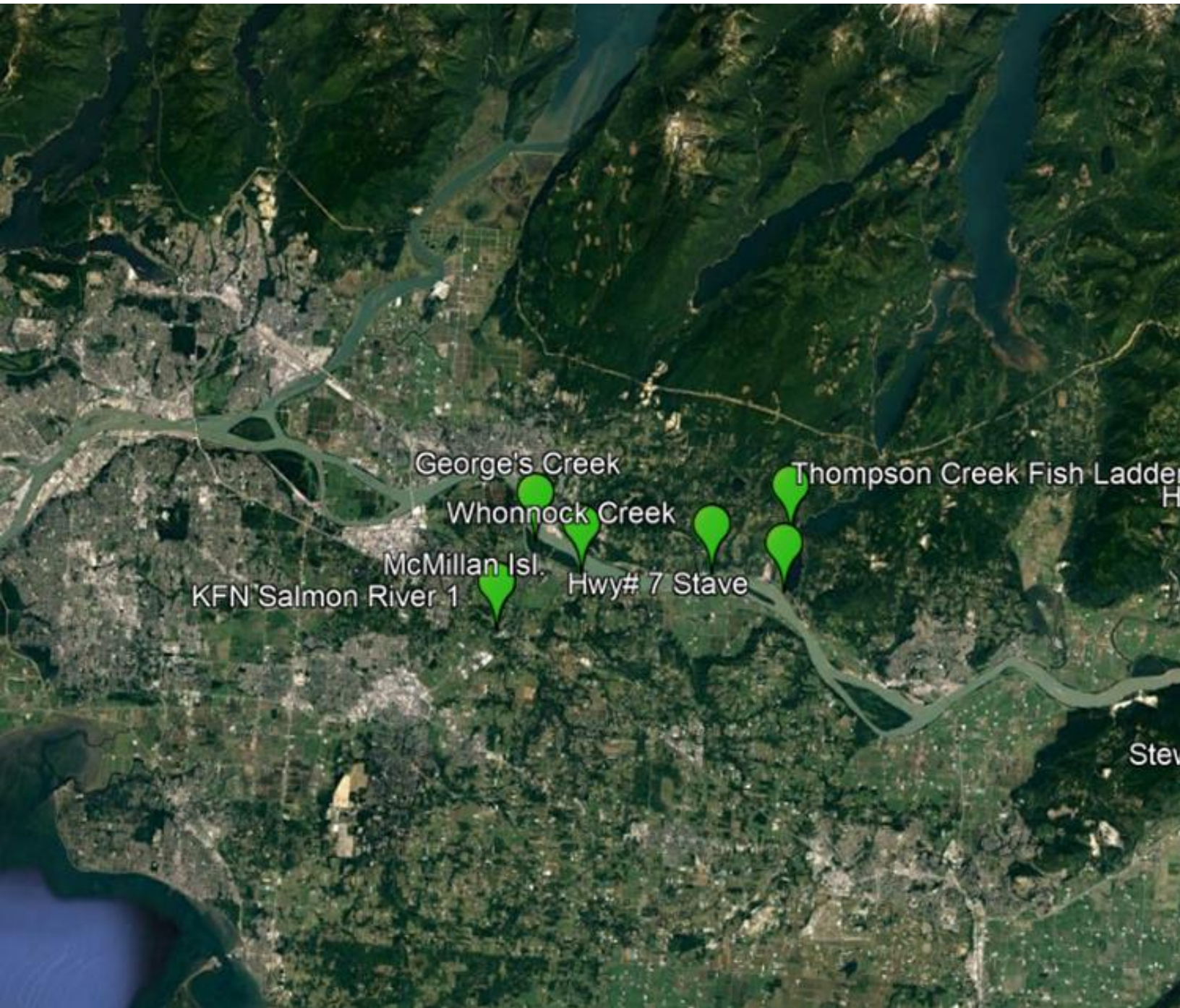
Schwichtenberg Family



BIRCH
GROVE
NURSERY



2019 PROJECTS ACROSS THE REGION



LANGLEY

Salmon River – Enhancement
George's Creek – Planting & Monitoring
McMillan Island – Riparian Area Maintenance

MISSION

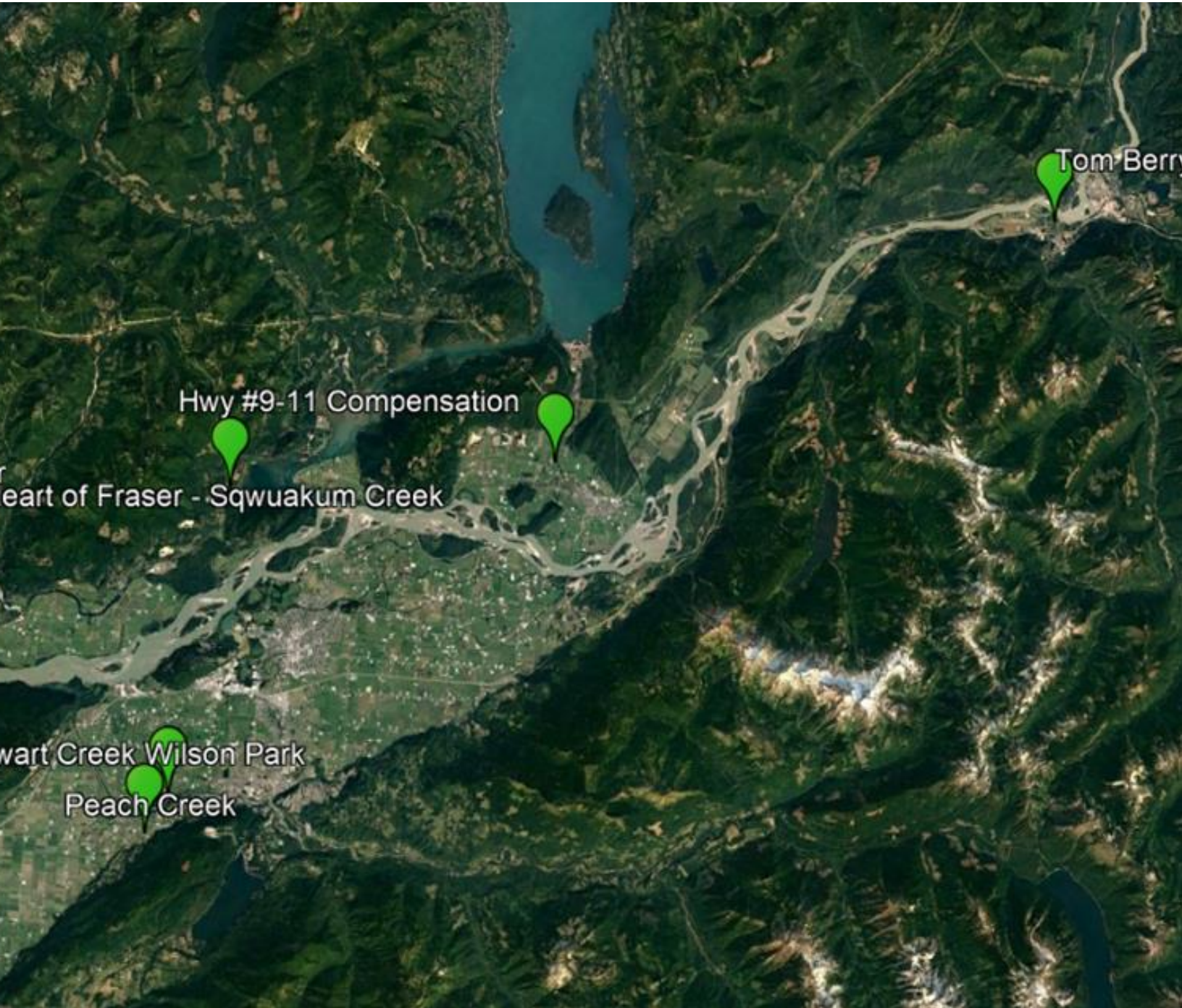
Thompson Creek Fish Ladder
Stave River – Planting
Stave River – Compensation
Silverdale Wetland – Rotary Enhancement Day

MAPLE RIDGE

Whonnock Creek – Bioengineering & Monitoring

ELECTORAL AREA C

Squwakum Creek – Gravel Augmentation
Chehalis-Harrison WMA – Mgmt. Plan Support
Bateson Slough – Restoration Planning Support
Chehalis First Nation – Spawning Salmon Habitat Creation



DISTRICT OF KENT/AGASSIZ

Agassiz Slough – Riparian Enhancement
Highway #9-11 – Compensation

CHILLIWACK

Stewart Creek – Wilson Park Salmon Habitat
Peach-Salwein – Salmon Habitat Restoration
Ryder Creek – Stream Enhancement

DISTRICT OF HOPE

Tom Berry – Salmon Habitat Restoration

2019 PROJECTS

Photo: DFO RRU Staff and machine operator celebrate with the local Thompson Creek Salmon Steward on the successful installation of the fish ladder.



STAVE RIVER, MISSION

Project Summary: The purpose of this project is to continue building on efforts from previous years to restore, create, and enable fish passage to off-channel habitats in the lower 2km of the Stave River watershed for all pacific salmon. Works involved replacing and upgrading an outdated and failing fish ladder on Thompson Creek, planting and bioengineering within the floodplain, and planning for future enhancement opportunities.

2019 Project Goals:

1. Replace the Thompson Creek fish ladder with a new steel fish ladder.
2. Continue bioengineering and replanting efforts along the recently created off-channel habitats to enhance at least 500m² of additional riparian habitat.
3. Complete a follow-up effectiveness assessment on the 2018 right bank stabilization project.
4. Feasibility stakeholder communication for future off-channel restoration options.
5. Conduct water quality monitoring and fish presence surveys.

Funded by Fish Wildlife Compensation Program, and **supported by** Stave Valley Salmonid Enhancement Society, Seyem Qwantlen, Kwantlen First Nation, District of Mission, Fisheries and Oceans Canada, and Ruskin Hydro Station.



Photo: Stave Valley Salmonid Enhancement Society director assists FVWC's replanting goals at Stave wetlands by hauling in loads of willow whips for replanting.

MOTI HWY #7 COMPENSATION, STAVE RIVER, MISSION

Project Summary: As a part of the Ministry of Transportation and Infrastructure Highway #7 Widening Project, the purpose of this project was to increase, restore, and enhance aquatic habitat and biodiversity. Additional riparian planting was completed along existing off-channel habitat. Work included replanting the banks with native vegetation and implementing bioengineering techniques.

2019 Project Goals:

1. Replant and implement bioengineering efforts in the riparian area of existing channels to increase aquatic habitat and biodiversity.
2. Maintain previous planting and bioengineering efforts and protect plantings against wildlife herbivory.
3. Monitor for water quality and fish presence in the existing channels.

Funded by Ministry of Transportation and Infrastructure, and **supported by** Ducks Unlimited Canada, Stave Valley Salmonid Enhancement Society, District of Mission, Matsqui First Nation, Seyem Qwantlen, and Kwantlen First Nation.

2019 PROJECTS



Photo: Construction in-progress to extend the Peach Creek salmon spawning channel.

PEACH CREEK, CHILLIWACK

Project Summary: The purpose of this project is to continue enhancing and re-watering the Vedder River floodplain to support salmon habitat and create social and recreational connections for the community as historic off-channels have been lost due to waterway constriction. Previous work involved excavating a new channel from the Hooge Road parking lot downstream. In 2019 project work included constructing an off-channel pond downstream of the Hooge Road parking lot, extending the Peach creek spawning channel upstream, and replanting the newly constructed channels.

2019 Project Goals:

1. Create an off-channel pond downstream of the Hooge Road parking lot to benefit rearing and overwintering salmon.
2. Extend the Peach Creek spawning channel upstream to increase spawning opportunities in the Vedder River floodplain.
3. Replant the newly created channels to support functional riparian areas and biodiversity.
4. Conduct water quality monitoring, fish presence surveys, and vegetation assessments.

Funded by Environment Canada and Climate Change Environmental Damages Fund, Pacific Salmon Foundation, Wally Hall Jr. Memorial Steelhead Fishing Derby, and **supported by** the City of Chilliwack, Fisheries and Oceans Canada, Sto:lo Research and Resource Management Centre, and People of the River.



Photo: A stack of empty pots after the successful planting of Stewart Creek in Wilson Park, Chilliwack B.C.

STEWART CREEK, CHILLIWACK

Project Summary: The purpose of this project is to create off-channel habitat to support aquatic species. Restoration work included converting a section of park space into a more biodiverse landscape by creating additional off-channel habitat to support aquatic species.

2019 Project Goals:

1. Create a new off-channel pond.
2. Replant the banks of the pond with native species.
3. Permanently fence the riparian area.
4. Manage invasive plant encroachment.
5. Educate the community on the value of off-channel habitat for salmon and of the importance of biodiversity.

Funded by Pacific Salmon Foundation, and **supported by** the City of Chilliwack, Fisheries and Oceans Canada, and Wally Hall Jr. Memorial Steelhead Fishing Derby.



Photo: Newly constructed Ryder creek off-channel pond.

RYDER CREEK, CHILLIWACK

Project Summary: The purpose of this project was to assist the Chilliwack Fish and Game Protective Association (CFGPA) with the creation of off-channel salmon habitat along Ryder Creek in Chilliwack B.C. to increase biodiversity and habitat for aquatic species.

2019 Project Goals:

1. Create an off-channel pond off of Ryder Creek to act as a sediment catch and as functioning off-channel salmon habitat.
2. Create a restoration and enhancement guide of Ryder Creek for the use of CFGPA.
3. Assist and support the CFGPA in future restoration activities at Ryder Creek.

Funded by Fraser Valley Watersheds Coalition, donations raised by the Wally Hall Jr. Memorial Steelhead Fishing Derby, and **supported by** Department of Fisheries and Oceans — Resource Restoration Unit.



Photo: FVWC and Kwantlen First Nation field technicians sampling Whonnock Creek for invertebrates.

WHONNOCK CREEK, KWANTLEN FIRST NATION, MAPLE RIDGE

Project Summary: The purpose of this project is to replant and implement bioengineering techniques along the bank of the newly constructed off-channel that connects Whonnock Creek to the Fraser River. This project is part of Kwantlen First Nation—McMillan Island Erosion Protection Project.

2019 Project Goals: Support Kwantlen First Nation with:

1. Implementing replanting and bioengineering efforts along newly constructed off-channel salmon habitat.
2. Monitoring fish species, benthic invertebrates, plant survivorship, and water quality.

Funded by Kwantlen First Nation.

2019 PROJECTS

Photo: Kwantlen First Nation technician installs willow whips along a recently created salmon-channel.



GEORGE'S CREEK, KWANTLEN FIRST NATION, FORT LANGLEY

Project Summary: The purpose of this project is to plant native vegetation along the recently constructed George's Creek and implement bioengineering using willow, dogwood, and cottonwood to create functional high-value salmon habitat. This project is as part of Kwantlen First Nation—McMillan Island Erosion Protection Project.

2019 Project Goals: Support Kwantlen First Nation with:

1. Implementing replanting and bioengineering efforts along newly constructed off-channel salmon habitat.
2. Managing riparian areas through physical controls of invasive blackberry.
3. Teaching Kwantlen First Nation members bioengineering techniques and how to monitor for plant survivorship.
4. Monitoring water quality and fish species.

Funded by Kwantlen First Nation.

Photo: Digging out Himalayan blackberry roots with Kwantlen First Nation technicians in an effort to manage invasive species at McMillan Island.



MCMILLAN ISLAND, KWANTLEN FIRST NATION

Project Summary: The purpose of this project is to support Kwantlen First Nation in replanting and maintaining the riparian area as part of Kwantlen First Nation—McMillan Island Erosion Protection Project.

2019 Project Goals: Support Kwantlen First Nation with:

1. Monitoring the previously planted native vegetation.
2. Removing invasive Himalayan blackberry.
3. Assessing the exclusion fence and reporting any damages or disrepair.

Funded by Kwantlen First Nation.

2019 PROJECTS

Photo: Residents of Lake Errock plant native species near the lake foreshore of their property



HEART OF THE FRASER, SQWUAKUM CREEK, LAKE ERROCK

Project Summary: This project is a small piece of a larger project called the Heart of the Fraser. The purpose of this project at Squwakum Creek is to augment the stream with spawning gravel for salmon where the creek meets Lake Errock, and to educate the public on the value of lake foreshore habitat for aquatic species and biodiversity.

2019 Project Goals:

1. Add spawning gravel to the section of Squwakum Creek upstream of Lake Errock.
2. Assist the residents of Lake Errock in replanting and bioengineering the foreshore habitat with native species.
3. Educate the public on the value of native species and foreshore habitat for wildlife and biodiversity.

Funded by Department of Fisheries and Oceans Canada — Coastal Restoration Fund, and **supported by** Sts'ailes First Nation, Leq'a:mel First Nation, Sq'ewlets First Nation, Ducks Unlimited Canada, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Hemmera, Harrison Salmon Stronghold, and Department of Fisheries and Oceans Canada — Resource Restoration Unit.




Photo: Section of Agassiz slough where bioengineering, replanting, and invasive species control was completed.

AGASSIZ SLOUGH, DISTRICT OF KENT

Project Summary: The purpose of this project is to continue enhancing the riparian area along Agassiz Slough to promote shading and support improved aquatic conditions for the rare Salish Sucker, and salmon. Work includes physical management of invasive Himalayan blackberry, bioengineering for bank stability, and guarding native trees and shrubs to reduce the impact from beaver herbivory.

2019 Project Goals:

1. Present as a delegate to District of Kent Mayor and Councilors on the shared benefits of enhancing the slough.
2. Control invasive blackberry on riparian areas.
3. Replant and complete bioengineering efforts along Agassiz Slough.

Funded by District of Kent Grant in Aid.

2019 PROJECTS



Photo: FVWC staff measuring stream velocity in a section of stream as a part of an on-going project to enhance aquatic habitat for Oregon Spotted frog.

MOTI HIGHWAY #7-#9 OREGON SPOTTED FROG AQUATIC HABITAT ENHANCEMENT

Project Summary: As part of the Ministry of Transportation and Infrastructure highway shoulder widening project, the FVWC is enhancing McCallum ditch by re-planting native species to support the critical functioning zone for the Oregon Spotted frog and to increase biodiversity.

2019 Project Goals:

1. Re-plant the banks of McCallum ditch with native species to enhance aquatic habitat for the Oregon Spotted frog and to increase biodiversity.

Funded by Ministry of Transportation and Infrastructure.



Photo: Field Crew Lead I demonstrates planting techniques volunteers at Tom Berry gravel pit in the Fall of 2019.

TOM BERRY, HOPE

Project Summary: The purpose of this project is to reclaim the Tom Berry gravel pit and turn it in to functional off-channel floodplain habitat, add biodiversity, and add and conserve community and First Nation values. Prior to restoration, the Tom Berry gravel pit stranded salmon once water levels reduced after the spring and summer flood season. This reduced the ability of salmon to complete their lifecycle. Past restoration work included installing an intake channel from Silverhope Creek for permanent flow in to the gravel pit. An outlet channel from the Tom Berry pit out to the Fraser River was created in 2019 and the pond in the gravel pit was recontoured to allow for replanting native species and for natural succession to occur.

2019 Project Goals:

1. Reclaim the gravel pit (used to create the Coquihalla Highway) to functional floodplain fish habitat.
2. Design and begin implementing restoration activities to allow permanent movement of salmon into and out of the pit.
3. Ensure restoration activities support First Nation, cultural, and community values.
4. Replant the gravel pit to support natural riparian habitat.
5. Manage invasive species encroachment.
6. Conduct water quality monitoring, fish presence surveys, and vegetation assessments.
7. Raise community awareness for the value of the site for conservation.

Funded by Department of Fisheries and Oceans — Coastal Restoration Fund, and **supported by** Ministry of Transportation and Infrastructure, District of Hope, AdvantageHope, Hope Mountain Centre for Outdoor Learning, Sto:lō First Nation, Fisheries and Oceans Canada, BCIT, Hope Communities in Bloom, and FVRD.

EDUCATION & OUTREACH



In 2019 we:

- Hosted 5 community plantings,
- Hosted 1 community weed pulling event,
- Guest lectured an Environmental Assessment class for the University of the Fraser Valley Department of Geography and the Environment,
- Attended Earth Day hosted by Kwantlen First Nation, and
- Hosted, in partnership with the City of Chilliwack, 2 school planting events at Hooge Road wetland and Stewart Creek in Chilliwack B.C.

We believe connecting with our communities through meaningful, fun, and hands-on learning activities is critical for building understanding and appreciation for nature and biodiversity.



Photo: Students from Yarrow Elementary school learn about fish, native plants and animals, and lend a hand planting the banks of Stewart Creek.

*“Education is not the
filling of a pail, but the
lighting of a fire.”*

- WB Yeats

STRATEGIC WATERSHED PLANNING



To better serve the needs of the region, the FVWC underwent a strategic planning retreat in 2019. With over 100 volunteer hours dedicated to the process, the leadership team identified some key goals to guide the upcoming years:

1. Remain geographically focused within the Fraser Valley Regional District and lower Fraser River region.
2. Value the collaborative partnership building approach.
3. Continue to restore and maintain degraded and/or lost aquatic ecosystems, prioritizing salmon habitats, to improve biodiversity and resiliency.



Photo: West-view of the Fraser River from Mount Woodside.

4. Develop a pilot agricultural ecosystem services consultancy program to support healthy agriculture and watersheds from small to large scale farming.
5. Take action to address climate change, improved air-quality and flood mitigation, efforts include planting native trees and construction of soft-water controls such as wetland creation.
6. Enhance the FVWC education, communication, and outreach program with a goal to inspire, train, and empower people to care for and connect to watersheds.

FVWC STAFF



Natasha Cox
Program Director



Rachel Drennan
Operations Manager



Winter Moon
Restoration Field Crew Lead



2019 Restoration Field Crew (left to right):
Bridgette Knowlan, Michael Gaultier, Winter Moon, Leah Alexis

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