

2016 YEAR IN REVIEW

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Watershed Program Overview:

Formed in 2005, the Fraser Valley Watershed Program is a joint partnership between the Fraser Valley Regional District (FVRD) and the Fraser Valley Watersheds Coalition (FVWC), receiving additional support from Fisheries and Oceans Canada (DFO). It is a unique and effective partnership between government and a non-profit society to improve the health of watersheds in the Fraser Valley. By using mostly grants and in-kind contributions, the Watershed Program works towards this goal through habitat enhancement projects, environmental monitoring, community stewardship, watershed planning, and partnership building.

Watershed Program Projects:

This report provides a summary of the activities and projects undertaken in 2016 as a result of the Fraser Valley Watershed Program. The Fraser Valley Watershed Program was active across the FVRD in 2015, with notable projects and activities occurring in the District of Mission, the City of Abbotsford, the City of Chilliwack, and the District of Kent/Agassiz. Specific projects and activities are described in more detail in the summary table (Table 1) and in subsequent sections of this report.

Across the Fraser Valley in 2016:

- 26,476 trees and shrubs were planted
- 38,315 m² instream habitat was created/restored
- 177 volunteers participated in FVWC planting events
- Specific details on restoration achievements are described below.

Noteworthy in 2016:

- The Abbotsford Rotary Club awarded the FVWC with the **Community Grassroots Project Award** for the Browne Creek Wetlands as part of the Abbotsford Environmental Leadership Awards (AELA).

Watershed Program activities are classified into one of four categories that help us improve the health of the watersheds in the Fraser Valley:

- 1. Habitat Enhancement and Restoration Program** focuses on implementing on-the-ground action to increase functional healthy watersheds that support healthy communities. It consists of riparian plantings, in-stream restoration, invasive species management, guarding and assessing vegetation stock, and using bioengineering techniques to enhance waterways and watersheds and increase habitat complexity for increased biodiversity.
- 2. Environmental Monitoring and Mapping Program** helps to identify the statuses and trends of waterways in the Fraser Valley, and the challenges and potential opportunities to enhance or restore these waterway systems (including identifying priority areas). It consists of conducting sensitive habitat inventory mapping (SHIM), water quality monitoring, fish, amphibian and bird surveying and ground-truthing habitats.
- 3. Community Stewardship education and Outreach Program** educates and connects communities to the importance of healthy watersheds and offers hands-on-training and experiences. This includes addressing challenges that can impact our air-water and soil. It consists of offering public lecture series, bringing in non-local community training opportunities and training university and high school students.
- 4. Environmental facilitation Watershed Planning/Conservation Partnership Program** coordinates and collaborates on shared watershed health initiatives across the region with local governments, regional governments, First Nations, other sectors and community groups for shared visioning and strategizing.

Table 1. Summary of Watershed Program Activities, Outcomes and Partners.

Project or Initiative	Project Objectives and Details	Partner Organizations
Habitat Enhancement Projects		
Stave River tidal wetland in-stream habitat and replanting	Created 7,866m ² new in-stream off-channel tidal habitat at Stave River. Completed archaeological assessments and bio-inventory assessments at Stave River.	<ul style="list-style-type: none"> ● Fisheries and Oceans Canada ● BC Hydro FWCP ● Recreational Fisheries Conservation Partnership Program ● Ducks Unlimited ● District of Mission ● Kwantlen First Nation ● Stave Valley Salmonid Enhancement Society
Chilliwack Lake Outlet Gravel Augmentation	Restored 1,989 m ² of spawning habitat in the upper Chilliwack Lake outlet with 1,000 m ³ of spawning gravels and replanted with 36 plants.	<ul style="list-style-type: none"> ● Fisheries and Oceans Canada ● City of Chilliwack ● Recreational Fisheries Conservation Partnership Program ● Pacific Salmon Foundation ● TD Friends of the Environment Foundation ● Steelhead Derby Donations ● BC Provincial Parks ● Ts'elxwéyeqw Tribe



Chilqua Slough	Restored salmon passageway of 27,610 m ² instream and planted a total of 2,860 native plants along the bank	<ul style="list-style-type: none"> • Environmental Damages Fund • EcoAction Canada • Fisheries and Oceans Canada • Dewdney Area Improvement District • Stave Valley Salmonid Enhancement Society
Trestle Channel	Replaced an under-sized and failing culvert with a new culvert and re-connected 50 m ² of instream	<ul style="list-style-type: none"> • Fisheries and Oceans Canada • City of Chilliwack • Yarrow Waterworks
Towne Creek	Bioengineering on Towne Creek to improve bank stability. Improved 50 m ² of instream, and planted 4,029 individual plants using bioengineering techniques.	<ul style="list-style-type: none"> • Fraser Valley Conservancy
Stewart Creek	Restored 360 m ² of instream salmon habitat from invasive reed canary grass encroachment and replanted with 2,396 individual native plant species.	<ul style="list-style-type: none"> • Recreational Fisheries Conservation Partnership Program • Yarrow Ecovillage • Pacific Salmon Foundation • TD Friends of the Environment Foundation • Steelhead Derby Donations • City of Chilliwack
Salwein Creek	Restored 390 m ² of instream salmon habitat and replanted with 6,385 individual native plant species	<ul style="list-style-type: none"> • Recreational Fisheries Conservation Partnership Program • City of Chilliwack • Fisheries and Oceans Canada • Pacific Salmon Foundation • TD Friends of the Environment Foundation • Fraser Valley Conservancy • Smits and Cow Cheese
Leq'a:mel First Nation	Small scale enhancements to improve the riparian habitat of Quamiche Slough	<ul style="list-style-type: none"> • EcoAction • Leq'a:mel First Nation
Environmental Monitoring & Mapping		
Water Quality/ fish sampling at Stave, Chilqua Slough and Nicomen Slough	Quarterly fish sampling and water quality monitoring for year (status & trend info) and/or supporting information gathering for hydrology studies.	<ul style="list-style-type: none"> • Fisheries and Oceans Canada • BC Hydro Fish Wildlife Compensation Program • Environmental Damages Fund • EcoAction • Leq'a:mel First Nation
Salish Sucker and Oregon Spotted Frog habitat maintenance and enhancement	Managing invasive species in Eastern Fraser Valley.	<ul style="list-style-type: none"> • Pearson Ecological • Fraser Valley Conservancy • Balance Ecological • Government of Canada's Habitat Stewardship Program for Species at Risk
Community Engagement & Stewardship		
Community Presentations and Tours	Sharing information on FVWC programs and projects. Including, tours of Stave River tidal estuary, Tours of Hopedale Slough Restoration, SFU REM student tour,	<ul style="list-style-type: none"> • University of the Fraser Valley • BC Institute of Technology • Fraser Valley Regional District • Fisheries and Oceans Canada



	SFU biology student tour, BCIT's student tour, Mission Garden Club, BCWF Wetlands Institute Presenter.	<ul style="list-style-type: none"> • Simon Fraser University • Mission Garden Club
FVWC General Public Meetings, and attendance at community hosted events	Hosted 5 public meetings with numerous keynote speakers to engage the public and membership. Events included Envirothon, Communities in Bloom Site Tour, City of Abbotsford volunteer appreciation day and Nature connections. Hosted 6 community-planting events. Community events included City of Abbotsford Involve Symposium, Salwein Creek Farm Open House, Sts'ailes First Nation Strategy meeting, Earthwise Society Strategy meeting.	<ul style="list-style-type: none"> • Chilliwack Senior Secondary • Fraser Valley Conservancy • Mission communities in bloom • University of the Fraser Valley • City of Abbotsford • Fraser Valley Regional District
Co-Organized ESI/Farmland Advantage Going from Pilot to Program Conference	Assisted in the co-organization of the ecosystem services conference with over 100 attendees	<ul style="list-style-type: none"> • Farmland Advantage • Township of Langley • Real Estate Foundation BC
FVWC Education Modules	FVWC education coordinator delivered 6 hands-on workshops about healthy watersheds and healthy communities	<ul style="list-style-type: none"> • Boag Foundation • School District # 33 & #75 • Girl Guides • Learn2Lead • Streamkeeper Groups
FVWC with Envirothon BC	FVWC staff co-taught the BC envirothon aquatic section.	<ul style="list-style-type: none"> • Boag Foundation • BC Envirothon Club • Fraser Valley Regional District
Watershed Planning or Conservation Initiatives		
Lower Stave River Off channel habitat restoration	Project planning includes collaborating with Kwantlen First Nation and BC Hydro Fish Wildlife Compensation program conducting further archaeology assessments prior to restoration.	<ul style="list-style-type: none"> • Fisheries and Oceans Canada • Kwantlen First Nations • BC Hydro Fish Wildlife Compensation Program • Fraser Valley Regional District
Partnering with Le'qa:mel First Nation	Restoring and supporting the Nicomen Slough Watershed	<ul style="list-style-type: none"> • Le'qa:mel First Nation
Building partnership with Sumas First Nation	Understanding the Sema:th Territory	<ul style="list-style-type: none"> • Sema:th Territory
Partnering with the Agriculture industry	Ongoing partnership building; working to promote healthy environments and sustainable agriculture.	<ul style="list-style-type: none"> • ARDCORP • Agriculture Environment Initiative
Partnering with FVC and SCCP	Species at Risk habitat assessments and enhancement opportunities	<ul style="list-style-type: none"> • Fraser Valley Conservancy • Government of Canada's Habitat Stewardship Program for Species at Risk • South Coast Conservation Program



1. Habitat Enhancement Projects:

a) *Stave River In-stream and Riparian habitat restoration (Mission)*



In partnership with Department of Fisheries and Oceans Canada (Resource Restoration Unit), Recreational Fisheries Compensation Partnership Program, and BC Hydro's Fish Wildlife Compensation Program- **7,866 m²** of salmon habitat was restored and/or enhanced in 2016. The works involved use of heavy machinery to create new off-channel tidally influenced habitats. Replanting took into consideration tidal influences, river fluctuations and overall survivorship in this system. Habitat enhancement included planting **10,770** trees, shrubs and aquatic sedges and rushes, creation of new over wintering channels, re-watering of historical channels and maintenance of existing habitat.

b) *Chilliwack Lake Outlet-Gravel Augmentation to support spawning salmon (Chilliwack)*



In partnership with Department of Fisheries and Oceans Canada, RFCCP, TD-FEF, the Pacific Salmon foundation, City of Chilliwack and donations raised from the Wally Hall Memorial Steelhead Derby, and with support from the BC Provincial Parks and TS'ELXWÉYEQW TRIBE, **1000 m³** of natural spawning gravels were augmented, restoring **1,989 m²** of spawning grounds and **36** plants were re-planted at the access-way. Works involved bringing the natural gravel to the lake outlet, having heavy machines and surveying equipment to carefully spread the gravel so that it can be used by returning salmon and steelhead.

c) *Salwein Creek -In-stream and Riparian habitat restoration (Chilliwack)*



In partnership with DFO, City of Chilliwack and a local dairy farmer, restoration was completed along the Jackson Keith reach of Salwein Creek. Invasive reed canary grass was removed from the channel and large woody debris was added. The banks of Salwein creek were planted with native trees and shrubs to help improve habitat value and water quality. In total **2,758 m²** of riparian plantings were completed.





d) Stewart Creek -In-stream and Riparian habitat restoration (Chilliwack)

In partnership with the Yarrow ecovillage and Department of Fisheries and Oceans Canada (Resource Restoration Unit) **360 m²** of Stewart Creek was restored. Invasive reed canary grass was removed from the channel and large woody debris was added. Volunteers replanted the banks with **2,396** native trees and shrubs.



e) Trestle Channel -Replacing a culvert (Chilliwack)

In partnership with the City of Chilliwack, Yarrow Waterworks and Department of Fisheries and Oceans Canada (Resource Restoration Unit) **50 m²** of Trestle Channel was restored and a new culvert was replaced ensuring salmon access into the Browne Creek Wetlands.



f) Towne Creek - Streambank Bioengineering and Riparian replanting (Chilliwack)

In partnership with the Department of Fisheries and Oceans Canada (Resource Restoration Unit), Fraser Valley Watersheds Coalition, South Coast Conservation Program, **50 m²** of Towne Creek was restored. A wattle fence was constructed along the top of the bank and volunteers replanted the banks totalling **4,029** native trees and shrubs (mainly willow whips) being planted.



g) Chilqua Slough - In-stream and Riparian habitat restoration (Mission)

In partnership with the Department of Fisheries and Oceans Canada (Resource Restoration Unit), Dewdney Improvement Area District, and Malabar Farms, **27,610 m²** of Chilqua Slough was restored. Invasive reed canary grass was removed from the channel. Volunteers replanted the banks with **2,860** native trees and shrubs.



2. Environmental Monitoring:

Environmental monitoring allows us to assess the current status of the environment and to evaluate trends over time. From this information we can observe specific issues that are of concern and identify actions needed for to best manage the watershed. The sampling, which is conducted by the Fraser Valley Watersheds Coalition, also provides an excellent stewardship training opportunity. We are currently monitoring water quality and fish presence throughout the region:

- along Stave River restoration sites in Mission;
- along Norrish Creek Watershed and Chilqua Slough in Mission.

3. Community Engagement and Stewardship:

In addition to the community engagement and hands-on training offered to participants at our planting events or our environmental monitoring opportunities, our Watershed Program participated on numerous additional stewardship activities in 2016. These included:

- Hosting a series of public lectures and information sessions to discuss issues and projects amongst local stewards, identify opportunities for collaboration, and have guest speakers share research results or projects.
- Providing regular project updates, announcements, and volunteer opportunities to the community via email distribution list (~400 people), the FVWC website (www.fvwc.ca) and Facebook page.
- Continuing to provide guidance and capacity-building to local residents, organizations, and school groups interested in our watersheds.
- Connecting with the biology and geography department of UFV to offer students partial credit for participating in hands-on restoration activities.

4. Environmental facilitation, Watershed Planning/Conservation Partnership:

In 2016, we partnered with Leq'a:mel First Nation to begin conversations on the importance of the Nicomen Slough Watershed. This has included the pursuit and planning of the hydrology assessment, understanding rare species habitat and salmon habitat, to improve the overall quality of this watershed.

2017 and Beyond:

2017 is shaping up to be another busy and productive year for the Watershed Program. Not only will we be continuing with many of our current projects, we are always in pursuit of additional opportunities that will help improve the health of Fraser Valley watersheds. Expected projects and tasks for 2017 include:

- Continue restoration enhancement and monitoring in Chilliwack, Abbotsford and Mission;
- Continue participation on watershed planning and conservation initiatives in the region;
- Continue to engage, train, and educate the community about our watersheds;
- Continue assistance on FVRD activities and operations;
- Continue to build relationships with local First Nations and support shared visions;
- Pursue other projects and partnerships as opportunities arise.



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Fraser Valley Conservancy
Placing lands in trust for our future

Boag Foundation

Wally Hall Jr. Steelhead Fishing Derby

2016 Partners and Project Supporters:



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Thank You! Every little bit helps us achieve our vision of "Healthy Watersheds and Healthy Communities"

