HRSEP 2001/02 FINAL REPORT

Project Title: **Hatzic Prairie Riparian Planting and Sediment Control Project**

Project Reference Number: **#01 – LF –HR –028**

Habitat Restoration Contract: **# F1528 – FO02 – 0016**

PROPONENT INFORMATION

Organization Name: **Fraser Valley Regional District**

Contact Name, Title: **Graham Daneluz, Planner I – Long Range**

Mailing Address: **8430 Cessna Drive, Chilliwack, BC V2P 7K4**

Phone:	**604 702-5000**	Fax :	**604 792-9684**
Alt Phone:	**1-800-528-0061**	Alt Fax:	

Email: **gdaneluz@fvrd.bc.ca**

Web Page: **http://www.fvrd.bc.ca**

Please list the **partners** in this project and their roles. Include the organizations, governments, funding sources, or volunteer groups that helped get this project started and completed. Roles may include (but are not limited to): letters of support, financial support, volunteer labour, help with acquiring permits, administration, access to landowner property, etc.).

Fraser Valley Regional District – project coordinator, administration, permitting, in kind contribution valued at $18, 250

Hatzic Valley Watersheds Committee – citizen committee provided direction, liaison with landowners, volunteer labour, letters of support, in kind contribution valued at $3000

Ministry of Agriculture, Food and Fisheries - $37,000 contribution from the Agricultural Environment Partnership Initiative; technical support and advice, conducted agricultural land use survey and assisted with mapping, letter of support, in kind contribution valued at $5000

Fisheries and Oceans Canada – input into project design, assistance with permitting; letter of support, in kind contribution valued at $5,000

Community Futures Development Corporation – assisted with grant applications, technical advice and support, letter of support; in kind contribution valued at $1500

Cascade Contracting – Local contractor, technical advice regarding excavation, letter of support; in kind

contribution valued at $800

University College of the Fraser Valley – student completed a directed studies project compiling literature and date for the study area; geography class project collecting community knowledge regarding historical fish populations, spawning locations, etc

Ministry of Transportation and Highways – active partner, provided raw fish presence data which FVRD digitized, technical advice, in-kind contribution valued at $10,000

Ministry of Water, Air and Land Protection – Letter of Support, technical advice, presentations to public

PROJECT INFORMATION

PROJECT PREPARATION

Project Rationale

The Hatzic Prairie contains a mosaic of habitat types including floodplain forests, riparian stream corridors, agricultural fields, and forested hillsides widely recognized for their importance to wildlife, plants and particularly fish. It is one of the most important, and degraded, salmon habitats in the region. Salmonid species present in the Hatzic system include Coho, Steelhead, and Chum.

Tragically, these habitats have been significantly degraded by development pressures, agricultural practices, and logging, which have interrupted natural stream processes and greatly increased the rate of aggradation. Residents report a serious decline in spawning salmon, likely due to a reduction in spawning habitat caused by aggradation and human interventions in the stream system.

Alterations of the drainage have exacerbated the degree of natural instability (flooding, slope instability, and aggradation) already occurring in this watershed area. As a result, there is intense pressure for mitigation works, including berm construction, catchment basins, and diverting and confining stream meandering. In the past these works have occurred on an adhoc and individual basis, often after a crisis flood event when little thought is given to the impact such works may have on fish habitat.

The effect has been a circular and cumulative processes of degradation in which aggradation, caused in part by logging related landslides in the upper drainage of Pattison Creek, negatively impacts salmon habitat and contributes to flooding. Land owners and agencies have reacted to floods by dredging, banking and confining the creeks, thus further degrading habitat, focusing aggradation and aggravating flooding conditions.

This project is intended to both enhance habitat and reduce the pressure for works within the stream which degrade habitat. Extraction of sediment at catchment basins only will leave the rest of the stream free from intrusion, thus protecting existing habitat. Habitat will further be improved by enhancement works such as riparian planting and adding in-stream complexity. In fact, we feel that the addition of in-stream complexity can actually improve the functioning of sediment traps as well as improve fish habitat and so be of double benefit.

The project is timely. Residents of the community are mobilized towards finding management solutions to these ongoing problems. A committee of FVRD staff and local residents was formed in Fall 2000, to develop a management plan that would integrate and mitigate these concerns. In its initial phase, the focus of research and grant applications so far have been towards primary research to establish and document environmentally sensitive areas. Research of this nature is necessary for inclusion in a long-range management plan. However, there is also a need for on-site project work that would build momentum within the community as well as enhance riparian habitat in critical spots in the area.

This proposed project will avoid many of the problems associated with the more piecemeal approaches of the past by integrating it within an overall management plan for the watershed.

Was a feasibility study or pre-assessment done for this project? **Yes**

If yes, please describe when and by whom.

Sites for catchment basins were identified by the Hatzic Valley Watersheds Committee, who as local residents, had for many years recognized the need for this kind of mitigation. To promote shared understanding of the area and these sites, the committee organized a tour of the watershed with the DFO and provincial agencies. One of the proposed sites was used for this purpose earlier; however, this site was part of a private operation which was not coordinated with other management objectives. In its role to provide sediment control, this project fulfills some of the recommendations made in the exhaustive engineering report, the Hatzic Prairie Drainage Study. Meetings with DFO Representative Jim Elliot and with Ken Lewis, Watershed Stewardship Coordinator for CFDC provided an initial background of concerns, locations, and parameters for approaching this project. In addition, project partner Cascade Contracting Ltd. has been involved in work with similar conditions and topography at Norrish Creek. Norrish Creek project is recognized by representatives from DFO and MELP for retaining habitat values. Cascade Contracting is equally confident of the effectiveness of these enhancements at this site.

Did you receive DFO input on this project? **Yes**

Name, Title, and Location of DFO Contacts that helped you with this project:

Jim Elliott, Area Coordinator, Lower Fraser Region, Habitat Conservation and Stewardship Program
Craig Sciankowy, Habitat Biologist, Land Use Section, Fraser River Division
Alan Jonsson, Project Engineer, Resource Restoration, Habitat and Enhancement Branch, Lower Fraser River

PROJECT OBJECTIVES (FROM "APPENDIX A" OF YOUR CONTRACT)

Objective # 1 : Collect and compile all existing fish presence information for the study area into a digital atlas

Was it achieved?: **Yes**

Details:

FVRD mapped and digitized extensive fish trapping data collected the Ministry of Transportation in 2000. FVRD further refined this data by conducting additional trapping at sites found by MoT not to contain fish. In many cases, FVRD found fish at these sites. A copy of the fish presence map is attached hereto. The data was incorporated into FVRD's GIS and is now broadly available for land use planning. The data has also been provided to MWALP.

Objective # 2 : Complete an initial survey of habitat information in main stem streams, and assess locations in terms of limiting factors or priority for protection or enhancement

Was it achieved?: **Yes**

Details:

FVRD has conduced mapping and inventory to SHIM standards of most creeks within Hatzic Prairie. SHIM field work wrapped up at the end of March, 2002. However, post processing of the data and data interpretation is not yet complete. FVRD will complete the SHIM mapping within the coming weeks. The data will be reviewed by FVRD's Stewardship Coordinator and biological consultant (Scott Resources Services) to determine limiting habitat and identify priority areas for protection and enhancement.

In addition, our biological consultant (Scott Resources Services) has completed a report entitled *Riparian habitat Enhancement Opportunities Along Lagace Creek Main stem*. This report identifies a number of potential sites where habitat enhancement would be effective. The report is attached hereto for your information.

Objective # 3 : Identify sites for construction of catchment basins for collecting sediment, and complete these catchment basins

Was it achieved?: **Yes**

Details:

Potential catchment basin sites were identified by the Hatzic Valley Watersheds Committee and Northwest Hydraulic Consultants. Basin sites were prioritized and discussed with the community at a public meeting. Two sites were prioritized. Construction of the first site on Lagace Creek was completed in October 2001. All in stream work was supervised by Scott Resource Services. A fish salvage and other mitigative works as described in an attached report by Scott Resource Services were performed. Photos of the construction are attached hereto. A conceptual design for the second site has been completed and detailed investigation is underway. We anticipate that construction of the second site will occur during the 2002 fisheries window. FVRD has obtained funds from the Agriculture Environment Partnership Initiative (MAFF) to this continue work. All technical reports produced are attached hereto.

Objective # 4 : Identify sites for providing riparian planting along the stream to provide rearing habitat and complete planting at these sites

Was it achieved?: **No**

Details:

Twenty pieces of anchored course woody debris have been professionally placed downstream of the sediment trap location on Lagace Creek. Boulders were also strategically 'thrown' into the channel to create complexing. The catchment basin design also included weirs, pools and complexing features. Photos of sediment trap construction and design are attached hereto.

Sites for providing riparian planting along the stream have been identified. However, **no planting has yet occurred**. FVRD is committee to completing the riparian planting and has targeted funds (from the Agricultural Green Fund) to purchase and plant 2500 plants this fall. Planting will be performed by members of the Hatzic Valley Watersheds Committee and local residents under the supervision of an appropriate professional.

Objective # 5: Build greater momentum and awareness of mitigation measures within the community

Was it achieved?: **Yes**

Details:

This objective was met in a number of ways:

- A community group, the Hatzic Valley Watershed Committee has been intricately involved through out the duration of the project. The committee is made up of ten residents supplemented by FVRD, MAFF, and other agency staff. The committee was involved in decision making in all phases of the project and attended on-site technical meetings.
- In addition, FVRD published four watershed newsletters which were sent to all households in the Hatzic Valley.
- A public meeting, attended by approximately forty residents, was also held to discuss the project. FVRD will also organize a community planting event this fall.
- A community knowledge workshop was held to gather local knowledge. UCFV students facilitated the event. All data was gathered into cultural atlases which are publicly available at the FVRD office in Deroche.

PROJECT SUMMARY

Please provide an overview of your project below. If required, you may attach an additional sheet. Your summary should include:

- Methods used to accomplish your completed or partially completed objectives
- Whether the project proceed according to plan, or if you encountered unexpected difficulties
- Whether you ran over or under budget
- Whether the project took longer or less time than projected

After receiving community input, FVRD engaged Northwest Hydraulic Consultants (NHC) to perform engineering and design of sediment control sites. Scott Resource Services (SRS) provided biological services. A consultative process was used to select two sediment control sites. NHC and SRC, with input from DFO, prepared a design for a sediment trap in Lagace Creek. After a lengthy approval process, work in the stream began late in September 2001. Due to time constraints, the basin design was modified (see attached letter from NHC). Nevertheless, a three cell catchment basin and a variety of in-stream complexing features were successfully installed. In-stream complexing consists of approximately twenty pieces of large woody debris, a weir, and boulders placed in the stream. The design of the basin also achieved some complexing objectives. The basin has successfully trapped debris and will likely require annual maintenance. FVRD will develop an operations and maintenance plan for future maintenance.

Project details and methods used to complete the project are described in the various reports by Northwest Hydraulic Consultants and Scott Resource Services attached hereto. The project was negatively affected by the compressed timeframe we had to gain approvals and complete works within the fisheries window. The approval process was particularly time consuming. The project is on budget and on time.

Through out the project there has been a strong tension between the values of the community and their desire to protect property from flooding and poor drainage, and the values of DFO who have sought to improve habitat in this volatile system for fish. FVRD has attempted, sometimes unsuccessfully, to bridge these disparate perspectives.

PROJECT STATUS AND FOLLOW-UP

Please describe the current status of the project. Please comment on the following:

- Whether the project is complete
- Has the problem being addressed been solved? (see “Project Rationale” on page 3)

- Recommendations for future work

FVRD has completed one of two planned sediment control sites. Funding has been secured from the Agriculture Environment Partnership Initiative to construct the second site this year. Work towards this end is ongoing. On April 25, 2002, FVRD and NHC will present to the Hatzic Valley Watersheds Committee a conceptual plan for a second sediment control site and off channel habitat in lower Hatzic Slough. We will then refine the plans, seek the appropriate approvals, seek landowner cooperation, and begin excavation in the 2002 fisheries window.

The catchment basin constructed in upper Lagace Creek has functioned well from both sediment control and habitat perspectives. Anchored CWD and other in-stream complexity mechanism have proved to be successful. SRS documented high salmonid usage of the area last fall.

The works take a positive step in addressing deposition and drainage problems along Lagace Creek and improving fish habitat. However, the problem has not been solved. The incredibly large volume of material originating in the upper Pattison Creek watershed from three active landslides will be an ongoing issue, but the catchment basins constructed under this program will certainly help to alleviate the problem. They are a component of the solution.

FVRD, in partnership with provincial agencies and local residents, is developing a watershed management plan for the Hatzic Watershed. The WMP will identify a comprehensive approach to managing drainage, flooding, habitat and land use in the watershed. Upgrades to the Hatzic Pump Station, which pumps water from the Hatzic Watershed into the Fraser when levels in the Fraser are above those of the Hatzic System, are necessary to prevent the killing of fish and improve drainage. A greater acceptance of the natural processes of the valley, which include periodic flooding, wetlands, and 'poor' drainage, is also an objective of the plan. FVRD does not believe that large scale engineering works that would fully mitigate flooding and improve drainage are feasible or desirable. Such an approach would have unacceptable impacts on habitat and natural processes. The catchment basins are a part of a program that focus on small scale works that minimize impacts to habitat, or indeed benefit habitat, yet result in a positive benefit for area residents.

PROJECT SUMMARY STATISTICS

The statistics you will provide below help us to determine the specific and overall achievements of the Habitat Restoration and Salmon Enhancement Program. A summary report will be completed in the winter of 2001/2002, and distributed to all previously funded proponents. This report will be available to all interested individuals and organizations.

PERSONNEL

Total # of persons trained (staff and volunteers):

STAFF		VOLUNTEERS	
Number of persons employed:	**4**	Number of volunteers involved:	**8**
Person-days of employment created:	**45**	Total number of volunteer hours:	**+100**

ACTIVITY TYPE

Species Addressed (check all that apply):

Coho	**Yes**	Chinook	
Pink		Sockeye	**Yes**
Chum	**Yes**	Steelhead	
Other (Specify):			

Activity type (check all that apply):

Inventory & Mapping (See #2 below)	**Yes**	Stock Assessment (See #1 below)	**No**
Public Awareness (See #3 below)	**Yes**	Habitat Restoration (See #4 below)	**Yes**
Stock Enhancement (See #1 below)	**No**	Stewardship/Community Planning (See #3)	**Yes**
Other (Specify):			

QUANTIFIABLE RESULTS

1. For Stock Assessment and Enhancement Projects:

Number of Juvenile Salmon Enumerated:

Number of Adult Salmon Enumerated:

Number of Salmon marked/tagged or released: N/A

Other (specify):

2. For Mapping & Inventory Projects:

Was your data collected in accordance with the DFO-HEB Info. Management guidelines or Sensitive Habitat Inventory Mapping (SHIM) guidelines? **Yes**

If yes, was it submitted in digital format? **Not yet**

Linear or square metres of area mapped or inventoried: **37 km**

3. For Stewardship/Community Planning and Public Awareness Projects:

Number of Public Presentations/Media Releases:	**1 general pubic meetings (approx 41 residents) 6 pubic committee meetings 4 newsletters to all Hatzic Valley households**
Number of Landowners Contacted:	**Approx 500 (all landowners in Hatzic Valley, BC)**
Other (specify):	

4. For Habitat Restoration Projects:

Habitat Addressed (Check as many as apply):

In-channel	**Yes**	Lake	☐
Off-channel		Estuarine/Marine	☐
Riparian	**Yes**		
Other (Specify):			

Fencing:	Stream length protected	metres
	Stream area protected (fence-to-bank width x length along stream):	Square metres
Riparian replanting:	Area replanted	**To be completed Fall, 2002**
	Number of trees/shrubs planted	**2500 plants to be planted**
In-channel habitat:	Stream area restored	**In-stream complexing and LWD placed in approximately 100 metres of stream**
Off-channel habitat:	Stream area created/restored	Square metres
Estuarine habitat:	Area created/restored	Square metres
Lake habitat:	Area created/restored	Square metres

Fish Access:	Length of stream made available	metres
	Area of habitat made available (square metres):	Square metres

Other (specify):

PROJECT LOCATION

This information will help us to enter your project into the "Fisheries Project Registry", a joint Federal-Provincial database that summarizes fisheries projects in British Columbia and the Yukon Territory.

	Name(s) or Code from the "BC Watershed Atlas"
Creek(s), stream(s), or river(s) where project took place:	**Lagace Creek, Hatzic Slough, Hatzic Valley, BC (east of Mission, BC; north of the Fraser River)**
Name of local watershed:	**Hatzic**
Major Drainage (check one):	**Fraser River**
Marine Statistical Area or Sub-Area:	
Nearest Community:	**Mission, BC**
Other geographic information to help us locate your project:	**Map 92G.0019, 92G.029**

Latitude: **Approx range 49_12' to 49_13'** Longitude: **Approx range 122_14' to 122_15'**

UTM Coordinates: Grid Zone: Easting: Northing:

SUPPORTING DOCUMENTATION

You may attach additional documentation to illustrate your project's results. (optional)

Documentation Attached (Check as many as applicable)

Maps	**Yes**	Newsletters	**Yes**
Photos	**Yes**	News clippings	**No**
Data report	**Yes**	Other	

FINANCIAL SUMMARY

HRSEP FUNDING SUMMARY

Since your HRSEP project began, you have provided interim financial statements and project updates with your invoices to receive installments of your funding. One final financial statement that summarizes all spending of HRSEP money is required for your final payment. Please enclose your financial statement and final invoice with this summary report.

Total received from HRSEP to date:	**$44,500**
Date:	**18 April 2002**
Total HRSEP money spent and reported on financial statement form (please attach statement):	**$49,493.26**
Total received from HRSEP after final invoice is paid:	**$49,440**

HRSEP FUNDING DETAILS

Please enclose an HRSEP standard financial statement. These are available by mail or e-mail upon request from Elizabeth Leboe at (604) 666-8515.

It is not necessary to forward copies of individual receipts and invoices. As per the terms of your Habitat Restoration Contract, please retain these in your files for a minimum period of three years, as DFO reserves the right to audit all HRSEP projects.

OTHER CONTRIBUTORS

Contributions to the project's total budget may have been from other agencies or in-kind contributions from your own organization; please provide basic details below. Please estimate in-kind donations if not known exactly:

Funding Source Details	Amount of funding (please note if funding is 'in-kind')
Fraser Valley Regional District	**$18,250 (in kind)**
Agriculture Environment Partnership Initiative, Ministry of Agriculture, Food and Fisheries	**$37,000 (+$5000 in-kind services)**
Ministry of Transportation	**$10,000 (in kind)**
Hatzic Valley Watersheds Committee	**$3000 (in kind)**
Fisheries and Oceans Canada	**$5000 (in kind)**
Community Futures Development Corp.	**$1500 (in kind)**
Cascade Contracting	**$800**