

Final Report
for
Bridge Coastal Restoration Program Funding
Project 02.ST.12.

Submitted by Stave Valley Salmon Enhancement Society
January 4, 2003

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Executive Summary

This project is the first stage of a multi-year program to purchase and protect, in perpetuity, a corridor of wetlands that will form an unbroken chain of fish and wildlife habitat from downtown Mission to the Stave River. This project has been coordinated with the activities of a variety of partner groups, including the District of Mission, so that it compliments trail network and community recreation planning already underway.

The funding from this grant was specifically targeted at obtaining information required prior to submitting a proposal for the purchase of wetlands adjoining the Stave River. The proposal for the purchase of this land has now been submitted to BCRP for consideration during the 2003 grant application process. If successful, BCRP funding will be used to purchase the Stave wetlands, which are currently owned by Genstar Development Company. Genstar has committed to donate all of the proceeds from this land transaction to the purchase of additional wetlands in the adjacent Silver Creek estuary. Ducks Unlimited has committed an additional \$300,000.00 to augment Genstar's donation. The District of Mission has also agreed, in principle, to contribute \$500,000.00 should this land purchase take place.

Tasks undertaken to produce this report included the following:

➤ **Property Appraisal**

A detailed property appraisal of both the Stave River wetlands and the Silverdale Creek estuary was conducted by Wes Umphrey of Umphrey Appraisals & Land Management. Umphrey Appraisals of Victoria has been used frequently by Ducks Unlimited and is qualified to make appraisals to a standard required for land gifting.

➤ **Environmental studies**

Minnow, plant and water quality studies were undertaken at the Donatelli Creek estuary and neighboring Silvermere Lake.

➤ **Discussions with Kwantlen First Nation**

Stave Valley Salmon, Ducks Unlimited and Genstar Development Company met with representatives of the Kwantlen First Nation Band and outlined common objectives in the protection and management of the Stave River wetlands.

➤ **Final agreements for land acquisition**

Discussions were held with Genstar and an agreement was reached regarding specifics of properties to be purchased. Ducks Unlimited met with the owner of the Silverdale Creek wetlands and reached an agreement regarding purchase price.

Introduction

Background

This proposal grew out of **The Gateway Wetlands Project** which is an ongoing effort by a broadly based consortium of non-profit, government, corporate and community groups to protect Fraser River wetlands of western Mission. As one of the founding members of this consortium, Stave Valley Salmonid Enhancement Society has worked closely with B.C. Hydro, Fisheries and Oceans Canada and the local community during the last twenty years to protect and enhance natural habitat in and surrounding the Stave River. The work we have undertaken was necessary to maintain the existing spawning grounds, which now support all five species of salmon along with steelhead and cutthroat trout. In recent years, the returns to the Stave River have regularly exceeded 200,000 spawning salmon.

Healthy fish and wildlife populations can only be maintained if there is a comprehensive plan to preserve natural habitat on the Stave River. Most of the western shore is already under heavy pressure from long established industrial developments. Increasing pressure for urban development has the potential to place the eastern shore in peril. SVSES has partnered with Ducks Unlimited, Genstar Corporation, District of Mission, Fisheries and Oceans Canada and Kwantlen First Nation to develop a comprehensive protection plan for the eastern shore of the Stave River. Further, SVSES has partnered with Mission of Streams, District of Mission, and VanCity Credit Union to combine this project with work already underway to create a wetlands preserve and trail network which, when completed, will cover approximately 300 acres.

Statement of Need

Extensive tracts of preserved wetlands along the Stave River and Silverdale flats will help ensure the survival of the five salmon and two trout populations that are integral to a developing aboriginal selective fishery and a growing recreational fishery. This contributes to the overall BC commercial harvest of salmon. Healthy salmon returns provide an important food source for species including the Bald Eagle, Great Blue Heron, American Mink, and Black Bear. Additional marine derived nutrients from the salmon carcasses provide an important food and nutrient source for both aquatic and terrestrial animals and plants in the area. In addition to protecting habitat, this project provides controlled public access to a substantially larger area of the Stave River and Silverdale wetlands, decreasing pressure on current recreational facilities and generating a significant benefit to the local economy.

Long Term Objectives

Purchasing the Donatelli estuary will enable careful monitoring and protection of its distinct plant and animal populations. In particular, the blue listed Brassy Minnow needs further study and protection.

The purchase and direct control of the proposed wetlands will ensure no further habitat losses occur.

Degraded over winter, coho rearing habitat in the Stave River can be increased by selective channel enhancement on the purchased wetlands. This is extremely important in the Stave, as the Ruskin Dam has reduced useable habitat to such a small area. This is particularly important in protecting coho populations, which have traditionally migrated upstream of the Ruskin Dam where, historically, they have taken advantage of small tributaries for spawning and over wintering habitat.

2002 Funding Objectives

➤ **Property Appraisal**

A detailed property appraisal of both the Stave River wetlands and the Silverdale Creek estuary was conducted and fair market value prices were established.

➤ **Environmental studies**

Minnow, plant and water quality studies were undertaken at the Donatelli Creek estuary and neighboring Silvermere Lake. This activity was undertaken as a comparative study to determine if Donatelli estuary is unique in relation to the surrounding wetlands

➤ **Discussions with Kwantlen First Nation**

Discussions were held and mutual concerns about the protection of Stave River foreshore habitat were shared.

➤ **Final agreements for land acquisition**

Discussions were held with Genstar and an agreement was reached regarding specifics of properties to be purchased. Ducks Unlimited met with the owner of the Silverdale Creek Wetlands and reached an agreement regarding purchase price. Conditions of sale were set and initial discussions with the District of Mission regarding Land subdivision and transfer were held.

Study Area

The proposed sites are in four locations on the Stave River between the Ruskin Dam and the Mouth of the Fraser.

➤ **Site1** - Is made up of two properties located on the south side of Highway #7 joining with the Stave River between the highway bridge and the railway bridge. These properties consist of a total of 42 acres. Of this area, 30 acres are wetlands containing Donatelli Creek, which flows into the Stave River and is affected by its flood and tidal action. These wetlands are one of five known habitats in B.C. for the indigenous Brassy Minnow, a blue listed fish.

Legal descriptions: Rem DL 437 (9 acres); Lot 15, DL 435 Group 1 NWD Plan 58616 (33 acres)

➤ **Site 2** – Is a 7 acre island (historical) on the east side of the Stave River near the Hydro Park. This island borders much of the spawning channel that has been created over the last two decades and is important terrestrial habitat and has excellent potential for interpretive trails.

Legal description: Parcel D (L58957E) of N ½ of the NE ¼ Section 3 TWP15 NWD

➤ **Site 3** – Is a 4-acre island on the west side of the Stave River adjacent to Wilson Rd. This site borders the most recent habitat work done on the Stave and offers further potential for stream and terrestrial enhancement as well as providing excellent public access for summer recreation or fall sports fishing.

Legal description: Parcel B (L58956E) of N ½ of the NE ¼ Section 3 TWP15 NWD

➤ **Site 4** – Is the foreshore of Silvermere Island from the end of the causeway along the west side of Silvermere Island (eastern shore of the Stave) and along the dyke separating Silvermere Lake from the Stave River. The proposal does not include a purchase of this land, but rather the proposal includes an agreement with the current owner to protect the natural environment and to provide public access for a trail paralleling the shore of the Stave River.

Adjoining Habitat – This proposal is part of a larger wetlands preservation project (The Gateway Wetlands Project) that includes a corridor of wetlands that is connected to the Stave River but is not part of its watershed. This chain of wetlands spans the north shore of the Fraser from Windebank Creek in Mission to the Stave River. Fish and wildlife impacted by the construction of the Ruskin Dam have been confined not only to the much reduced Stave wetlands but to this adjoining corridor as well.

Methods/Results

➤ **Property Appraisal**

Umphrey Appraisals & Land Management completed a full appraisal of the Stave River and Silverdale Creek wetlands. This appraisal, which will be sent under a separate cover is very detailed and offers a number of comparisons to similar properties.

The results of the appraisal were somewhat different than anticipated. In general the Stave Wetlands were of a lower value than the Silverdale Creek property. As a result the funding request included in our 2003 BCRP is less than we had anticipated a year earlier when the application for this grant was completed.

➤ **Environmental studies**

Under the supervision of Bruce Nidle, a biologist with Pottinger Gaherty Environmental Consultants Ltd., SVSES conducted a water quality survey of Silvermere Lake and Donatelli Creek estuary. Field data was collected on a bi-weekly basis throughout the summer and fall. Data continues to be collected over the winter but has shifted to a monthly schedule. Ten fixed testing sites were established

in the study area. Air temperature, water temperature, P.H., Dissolved Oxygen levels and secchi depth readings are taken at each site, both on the surface and at one meter intervals of water depth. In addition, water samples are taken at selected sites at a depth of one meter and are sent to Cantest Labs for analysis. Water is tested for coliform, nitrite, nitrate, ammonia, and ortho P.

Netting and trapping was done at all locations and fry species were identified. Equipment for this activity was limited and may have skewed the test results. Further study with additional equipment and expertise is required.

With assistance from DFO, a bathymetric survey of Silvermere Lake was conducted. The use of DFO's advanced GPS system will have made the results of this survey very accurate.

The results from the biological survey see attached data; have shown distinct differences between Silvermere Lake and Donatelli Creek wetlands. Plant life in Silvermere is primarily composed of invasive water lilies, and milfoil weed. Indigenous aquatic plant life is restricted to isolated pockets along the uninhabited shore line. Aquatic plant life in Donatelli Creek has not been impacted by these invasive species and indigenous water lily and native grasses and sedges are abundant.

Fish species in Silvermere Lake have also been profoundly affected by invasive species. The most common species netted was Large Mouth Bass, comprising over 90% of all fish taken. Also present in reasonable numbers were Sunfish, Black Crappie and Cat Fish. A very few Sculpin and Sticklebacks were also taken. No salmonids were taken in any of the sampling. Netting and trapping was unsuccessful in Donatelli Creek due to dense plant growth.

The bathymetric survey identified pre-flooding stream channels and man made deep pockets caused by pre-flooding gravel mining.

➤ **Discussions with Kwantlen First Nation**

A formal meeting at the Kwantlen Band office allowed for several hours of discussion. Topics covered included land use and habitat protection. Interest was expressed by the Kwantlen Band in gaining title to site 3 which adjoins their reserve lands.

As a result of these discussions SVSES and the other partners involved are looking forward to the formation of a Stave River habitat management committee. Band representatives agreed that such a committee would be of interest to them.

➤ **Final agreements for land acquisition**

Discussions were held with Genstar and an agreement was reached regarding the specifics of properties to be purchased. Ducks Unlimited met with the owner of the Silverdale Creek Wetlands and reached an agreement regarding purchase price.

Both land owners involved are prepared to sell the property at assessed value and have agreed to allow the fall and early winter for funding to be raised.

Discussion

SVSES remains committed to acquiring all of the Stave, Fraser, and Silver Creek wetlands possible. The results of the studies undertaken this summer show how profoundly wetlands can be affected by habitat modification and destruction. In particular, Donatelli Creek and its blue listed Brassy Minnow population need immediate protection. A transfer of invasive species across the narrow divide between it and Silvermere Lake could have a profound impact on the current population of native species.

The level of matching funding which is currently available should not be ignored. Land prices in the Mission area are low when compared to the rest of Greater Vancouver, but this price differential has been steadily dropping. When examining the entire Gateway Wetlands proposal, a \$200,000.00 investment of BCRP funding will result in the procurement of \$1,200,000.00 of protected wetland property

Recommendations

Stave Valley Salmonid Enhancement Society along with our partner groups, Ducks Unlimited, The District of Mission and Genstar Land Development Company, sincerely hope that BCRP will give this report full consideration and note how strongly survey results support our current application for wetlands acquisition funding.

Acknowledgments

Considerable effort was made to ensure that very little of the information contained in this report was made public. This was particularly important up until this fall when negotiations for land purchase prices were concluded. All partner groups including the District of Mission are aware of the role BCRP has played in the studies undertaken for this report.

Financial Statement
 Bridge Coastal Restoration Program Funding
 Project 02.ST.12.

BCRP Funding

Appraisals (2/3 total cost)	\$3,923.33 (receipt attached)
<u>Dissolved Oxygen meter (total cost \$1417.71)</u>	<u>\$376.67 (receipt attached)</u>
BCRP Total	\$4,300.00

Ducks Unlimited

<u>Appraisals (1/3 total cost)</u>	<u>\$1,961.67 (receipt attached)</u>
Ducks Unlimited Total	\$1,961.67

Genstar Development Company

Environmental Consultants Fees	\$10,000.00
Water testing	\$ 2,000.00
Construction of boat access	\$ 1,000.00
<u>Dissolved Oxygen Meter (remaining cost)</u>	<u>\$ 1,041.04</u>
Genstar Total	\$14,041.04

Fisheries and Oceans Canada

Field tech and GPS unit 2 days @ \$500.00/day cost	\$1,000.00	(Estimated)
<u>Computer tech and plotter 2 days @ \$500.00/day</u>	<u>\$1,000.00</u>	<u>(Estimated)</u>
DFO Total	\$2,000.00	

Stave Valley Salmonid Enhancement Soc.

Purchase of research boat (lower cost than 1 year lease)	\$5,500.00
Boat repairs and maintenance	\$1,076.30
Gas/ 2 cycle oil	\$ 275.00 (Estimated)
Courier services	\$ 150.00
<u>Office expenses/ insurance etc.</u>	<u>\$ 600.00 (Estimated)</u>
Stave Valley Total	\$7,601.30

Project Total	\$29,904.01
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List of Photos

1. Ortho-photo Silvermere Lake and Stave River
2. Silvermere Wetlands, Estuary of Donatelli Creek
3. Silverdale Creek during June high water
4. Conducting bathometric survey
5. Preparing for fish species sampling
6. Species netting
7. sunfish
8. Large Mouth Bass
9. Invasive Lily
10. Native Lily