

Bella Coola Valley Fish Habitat Restoration

Objectives

The objective of this project is to diversify the in stream hydraulics in selected reaches of tributaries of the Bella Cola River by increasing the amount of stable riffle/pool habitat and the amount of cover as well as improving access.

FRBC Region / MELP Region

Pacific / Cariboo

Author

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Proponent

Central Coast Regional District

Watershed / Stream

Bella Coola / Dump, Fish, G Hall, Molly Walker, Snootli, Tuck Creeks

Location

These tributaries are located in the lower Bella Coola Valley from 6km east of the estuary to 37km east of the estuary.

Introduction

The Lower Bella Coola River Watershed drains a relatively narrow, steep-sided valley. All project tributaries flow at low gradients within the floodplain and through developed lands. Fish values are very high for all salmonid species for both spawning and rearing.

Assessments and Prescriptions

All project streams are part of the Bella Coola Watershed Restoration Program. 1999 was the third year of the program. Initial Level 1 fish habitat assessment was conducted in 1995 by Summit Environmental with more site specific assessments and prescriptions conducted for individual stream reaches by Ministry of Environment personnel, DFO, Bioforest Consulting and MidCoast Aquatics. Common factors limiting fish production were primarily found to be channelization, lack of habitat diversity and cover, and restricted access. Poor habitat conditions are mostly due to human development i.e.: logging, cattle, roads and settlement encroachment.

Rehabilitation Work

The restoration of project streams (George Hall, Snootli, Molly Walker Creeks) occurred largely within lower reaches near or adjacent to their confluence with the Bella Coola River.

Riffles were constructed at a frequency of approximately 6 times the average bankfull width. The riffle structures consisted of logs that span the bank full width of the stream and are placed 30 degrees from perpendicular to the flow in an alternating sequence from the left bank to the right bank. Large wood in the form of logs and rootwads as well as cobble and boulder were the primary materials employed to add complexity and provide cover. The completed project has created approximately 50 new or improved riffle/pool /cover habitat sites.

A channel was excavated and complexed at Tuck Cr. and fencing installed to address cattle impact. A beaver dam and derelict bridge was removed at Fish Cr. and a deep pool was excavated and complexed. Maintenance and monitoring was conducted at sites competed in previous years. Failure rates of previous works was under 10%.

Reconfiguring stream channels into a stepped pattern or more sinuous morphology has created more diverse hydraulic and habitat conditions (Fig. 2). It also provides more water depth during low flow periods. The constructed riffles will enhance pools, recruit gravel, re-aerate flows, and assist fish passage. The pools will provide holding cover for spawners and rearing habitat for juvenile and resident salmonids.

Cost Summary

Labour	\$ 73,157.40
Machinery and materials	\$ 48,771.60
Total	\$ 121,929.00

Outputs

1.585 km of stream was restored.

Production Estimates

Biostandards for riffle-pool constructions are not well formulated. However, in a small watershed on the Sunshine Coast (Oulette Creek) riffle-pool construction increased pool habitat 4.5-fold. Fish biomass also increased 5.4 -fold after restoration (Newbury et al. 1997). Monitoring and evaluation of 1999-2000 works continues.

Proposed Work

The Bella Coola Watershed Restoration Program will continue to work to improve fish habitat throughout the valley. Goals include rebuilding degraded habitat, creating new habitat and protecting existing habitat.

For Further Information, Contact:

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Figure 1. Pre-construction view of Snootli Creek site.



Figure 2. Post-construction view of Snootli Creek site.



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