

# Appendix 11

## *Little Oyster Tributary Mapping and Inventory Project*

### Sensitive Habitat Inventory and Mapping (SHIM) Surveys

**Report Prepared by:**

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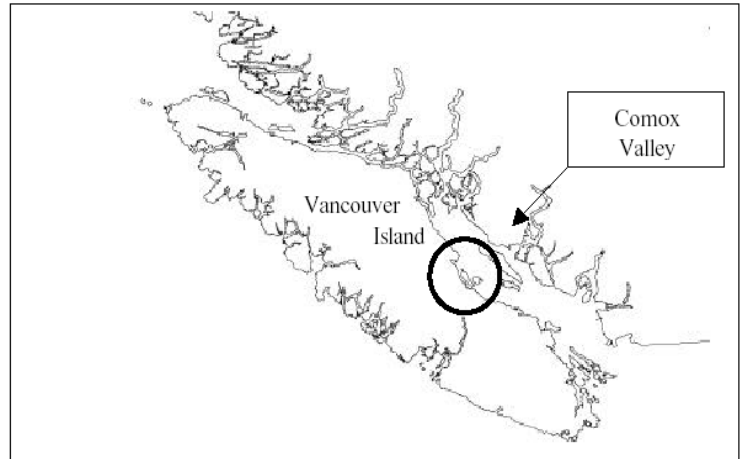
**For:**

Comox Valley Project Watershed Society  
Box 3007  
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January 2000

## Executive Summary

Extending for 1.0 km Little Oyster Tributary Creek is a tributary of Little Oyster River. The headwaters of Little Oyster Tributary Creek are located to the north of Iron River Main logging road, south of Cranberry Lane. Much of the system is wetland habitat modified by Beavers. According to landowners this creek is ephemeral.



Vancouver Island Map showing location of Comox Valley

During 1999-2000 Comox Valley Project Watershed Society conducted a Sensitive Habitat & Inventory Mapping (SHIM) survey on Little Oyster Tributary Creek. The SHIM method combined Trimble Pro XR GPS, compass & chain mapping techniques with stream inventory data collection, resulting in geo-referenced point data for viewing in ArcView GIS. This report is the outcome of this survey and should be read in conjunction with the accompanying map of Little Oyster Tributary Creek.

Restoration opportunities identified by this report focus primarily on management of obstructions caused by instream logjams, beaver dams and a blocked culvert as well as an extensively long (47.0 m) culvert beneath the Inland Island Highway. Riparian planting, erosion monitoring and culvert maintenance are other restoration/monitoring activities that may enhance fish habitat in Little Oyster Tributary Creek.

**Report Prepared by:** Drew Frizzell, Comox Valley Project Watershed Society

**Date of Report:** Jan 19, 2000

**Date of Survey:** Jan 11-18, 2000

## Survey Summary

**Stream Gazette Name:** N/A

**Alias:** N/A

**Watershed Code:** 920-600400-157000-00000-00000-0000-000-000-000-000-000-000

**Map locations:** – 92F-084-3-3 and 92F-094-2-1

### **UTM Coordinates:**

Mouth of Trib. @ Little Oyster River: Easting 0337041 – Northing 5530515

**Reach 2** (wetland) d.s. end: Easting 0336992 – Northing 5530271

**Reach 2** (wetland) u.s. end: Easting: 0336895 – Northing 5529959

Culvert @ Inland Isld Hwy d.s end: Easting 0336638 -- Northing 5529724

Culvert @ Cranberry Ln d.s. end: Easting 0336528 -- Northing 5529644

Headwaters collection point: Easting -- Northing

**Start Date of Survey:** Jan 11, 2000    **End Date of Survey:** Jan 18, 2000

**Stream Length Surveyed:** approximately 1.0 km of stream channel  
approximately 1.5 km of wetland perimeter

**List of Accompanying Documents:** Referral from the Regional District of Comox-Strathcona (RDCS), requesting this survey on the tributary in question. Orthophotos (Sensitive Habitat Atlas sheets of the entire system (see above) printed at 1:7000 scale for field use, cadastral information, and photographs taken during the SHIM survey. A database of SHIM information and area reference map have been created.

## **Background**

The information presented in this report was gathered during the 1999-2000 field season of Project Watershed's Watershed Mapping and Inventory Project, sponsored by the Dept. of Fisheries and Oceans Habitat Restoration and Salmon Enhancement Program, Fisheries Renewal BC.

## **Purpose of Survey**

The streams inventoried were chosen because of a need to collect information for the following purposes:

- updates to the Regional District of Comox Strathcona's Sensitive Habitat Atlas
- initiation of, or additions to, a set of "Streamkeepers Data" for the watershed
- determining rehabilitation, restoration or protection opportunities for the watershed

## **Methods**

The methodology used for this mapping/inventory project was "*Stream Mapping Procedures for Land-Use Planning in Coastal Urban Watersheds*" version 3.1, developed in December 1998 by Department of Fisheries and Oceans, Ministry of Environment, Lands and Parks, Langley Environmental Partners Society, and Community Fisheries Development Center.

## **Overview:**

This tributary originates to the north of Iron River Main logging road, south of Cranberry Lane. It flows through privately held lands for most of its length, and crosses under the Inland Island Highway by means of a culvert. Its confluence with the Little Oyster River is situated on forest company property. The mixed coniferous forest that dominates this area has been harvested within the past five years from the confluence to Cranberry Lane. Attempts have been made to maintain a riparian vegetation corridor from the confluence to the upstream end of the system's large wetland. From the wetland influent point to the Inland Island Highway, no attempt has been made to

maintain riparian vegetation. From the Highway crossing to the headwaters, the naturally occurring mixed coniferous forest is intact. The system is fed by accumulated ground water, and is contained within a well-defined channel except where human (and beaver) activities have altered its flow pattern.

There is some gravel and cobble substrate in reach 1; **reach 2**, entirely wetland, has only fine organic substrate. **Reach 3** was recently deforested and is consequently receiving large deposits of fine materials. Large woody debris is plentiful throughout, and in several cases obstructs the stream course. Gradient is consistently around 1 degree from bottom to top, except at wetlands (assumed 0 degrees slope) and at beaver dams and human modifications (culverts).

The land uses adjacent to this water course include forestry and road construction. The Inland Island Highway transects this system approximately 150 metres northeast of Cranberry Lane. The wetlands in **Reach 2** and **Reach 4** provide habitat potential for several species of wildlife; crews observed wildlife trees, various species of birds, and evidence of mink or marten as well as beaver dams.

Landowners along this system include a forest company and an agricultural enterprise. Both permitted access to their properties for this survey and both showed an interest in receiving data gathered. Both owners spoke of the obstructions and seasonal flow in this tributary as limiting factors for salmonid inhabitants. The highway crossing culvert is 47 metres long, with very little flow, and therefore may be an obstruction. Other obstructions to fish passage in this system are mainly beaver dams in **reaches 2 and 4**.

### **Features of Interest, and Rehabilitation and Protection Opportunities for Little Oyster River trib.**

**S1:** Start point of this survey is the place where tributary enters Little Oyster River.

**F4:** Logjam instream; partial obstruction to fish passage.

**F5:** Logjam instream; partial obstruction to fish passage.

**F7:** Beaver dam; probable obstruction to fish passage.

**F8:** Beaver dam; probable obstruction to fish passage.

**F9:** Beaver dam; probable obstruction to fish passage.

**F12:** Beaver dam; no fish passage.

**F14.5:** Large Beaver dam (40m X 1.4m X 1.6m high) has created very large wetland (400m X 40m). Start of **reach 2**.

**S16:** Furthest upstream extent of **reach 2** wetland. Influent point marks the start of **reach 3**.

**F27:** Subsurface flow for 45 metres.

**F33:** Downstream end of culvert (0.9 metre diameter) crossing under Inland Island Highway. This culvert represents an obstruction to fish passage due to its length (47m) and lack of adequate flow rate.

**F39:** Downstream end of culvert (0.3 metre diameter) crossing under Cranberry Lane. This culvert represents an obstruction to fish passage; its upstream end is severely blocked, and has resulted in increased volume and surface area for the wetland extending upstream from this point.

### **Conclusions:**

This stream system has been significantly modified by human and beaver activity.

**Reach 1** has fairly good potential salmon habitat, with some gravel substrate and plenty of large woody debris and complexity in terms of cross-sectional profiles, gradient, and consistent flow rate. A riparian management zone has been maintained and the confluence area itself is not likely to be disturbed by humans. Beaver dams are an obstacle along **reach 1** in general.

**Reach 2** is a large wetland, stable and contained within a larger basin. Substrate is uniformly fine, and the presence of algae suggests stagnation during low flows. Again, a riparian zone has been established to protect the wetland. There is some water in this wetland all year long.

**Reach 3** includes a discontinuation in the channel, complete lack of riparian vegetation due to recent logging and deposition of large quantities of fine material. The disturbances noted, several partial obstructions instream, along with a naturally shallow gradient and low seasonal flows, combine to produce a low quality fish habitat. Efforts were made during recent highway construction to reduce impacts on this tributary. The full impact of erosion and deposition from the highway construction and adjacent logging will not be apparent for 5 - 10 years.

**Reach 4** is mainly undisturbed wetland and generalized headwaters area. The forest and substrate here vary with proximity to the wetted edge.

**Recommendations: Priorities/Issues:**

- 1.)** A riparian management zone should be created on both banks by planting willow and some conifers, throughout the length of **reach 3**. The channel should be repaired in places where machines and debris have destroyed it. Erosion control may become a bigger issue in coming years, due to the recent human activity.
- 2.)** There should be an ongoing program of monitoring the Inland Island Highway crossing for associated erosion and culvert maintenance.
- 3.)** Removal of the obstruction at the upstream end of the Cranberry Lane culvert and periodic maintenance, to ensure more even flows to the lower reaches of the tributary.
- 4.)** Modification of obstructions in the lower reaches (removal or reduction of beaver dams and logjams) would allow passage at least as far as the end of **reach 2**. This would also regulate the flow rate and could enhance the habitat in **reach 1**. **Reach 1** has the highest level of feasibility for instream protection/enhancement opportunities but this option is dependent upon upstream maintenance and future behaviour.