

Kootowis, Staghorn, Lost Shoe and Sandhill Creek Instream Restoration

Objectives

The objective of this project was to improve fish access and continue restoring the hydrological, biological and riparian functions of creeks in the Kennedy Watershed. This was achieved by removing SWD and constructing cover and scour structures out of the existing LWD.

FRBC Region / MWALP Region

Pacific / Vancouver Island

Author(s)

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Proponents

International Forest Products
Steelhead Society, Habitat Restoration Corp.
Central Westcoast Forest Society

Watershed / Stream

Kootowis Creek
Sandhill Creek
Staghorn Creek
Lost Shoe Creek

Location

The Kennedy Watershed is located on the West Coast of Vancouver Island between Tofino and Ucluelet. Project creeks are located in the southwest corner of the watershed in an area known as the "Kennedy Flats".

Introduction

Forest harvesting practices from the 70's and 80's have negatively impacted the productivity of creeks in the Kennedy Flats area. Large volumes of woody debris accumulation in these low gradient streams have resulted in the development of a high concentration of jams. Unable to flush themselves of excess debris, the creeks have remained in this state for decades, blocking fish access while causing large scale winter flooding. Historical records indicate the presence of coho, chum, sockeye, pink, steelhead, and cutthroat trout within these systems.

Assessments and Prescriptions

Level 1 and level 2 inventories were conducted on the watersheds in 1995 and 1996 (Clough, 1996). These inventories indicated the need to address the large instream debris build up on 150 km of the 3 watersheds. The first season of in-stream work began in 1996. This initial work was assessed for effectiveness and the results used to modify the following years work plan where necessary. The assessment reports were part of an annual winter monitoring and assessment contract.

Rehabilitation Work

Instream work for the 2001 project season was conducted between July 16th to September 28th for a duration of 11 weeks. 17 workers were hired on to the project, working a total of 481 person days. Many were returning crewmembers, some having over 6 years of experience on this project. Non-embedded SWD was removed and placed in debris piles located above the high water mark. The remaining LWD was positioned and anchored in the creek channel. LWD structures were placed with cover and scour functions in mind. The objective was to improve habitat complexity by increasing pool and riffle frequency within the system. Restoration sites on Sandhill Creek were conducted within Pacific Rim National under Fisheries Renewal funds administered by the Regional Aquatic Management Society (RAMS). The remaining sites, located on Interfor's TFL 54, utilised Forest Renewal BC funds administered by Interfor and the Steelhead Society. Spawning gravel placement was implemented on two sites in Sandhill Creek.

Cost Summary

Wages	\$103,398.33
Machinery and materials	\$81,118.67
Total	\$184,517.00

Outputs

In 2001, a total of 4.6km of stream habitat was restored and maintenance was conducted on over 12km of 2000 project sites (Table). The field crews worked on a total of 61 jams, rearranging 736 pieces of LWD. Approximately 7050 feet of cable was used to complex and anchor LWD pieces in the creek channel.

Table 1 Restoration and maintenance areas.

Restoration Area	Length
Staghorn East Fork	481
Staghorn East Fork Trib 1	160
Staghorn Angus Lake Trib	1285
Kootowis GBR58 Main	135
Kootowis GBR58 East Trib	76
Kootowis GBR 58 West Trib	233
Sandhill	523
Lost Shoe	1734
Total	4627m
Maintenance Area	Length
Staghorn Creek	5110
Lost Shoe Creek	3625
Sandhill Creek	1030
Kootowis Creek	480
Smith Creek	2010
Total	12255m

Monitoring/Restoration Results

Routine monitoring (as per Koning, et al., 1997). of the previous year's work sites was conducted for all 118 jam sites Overall performance was high. The crew conducted a maintenance sweep during the first week of the field season, which focused on the removal of upswept debris resulting from over winter scour. On rare occasion, loose cables and failed bundles were observed. This exercise provided returning crew members with an opportunity to observe first hand the condition of their structures and the physical changes in the creek following the first winter season.

Proposed Work

The 2002 work plan will aim to restore the functionality of project creeks in their entirety by continuing with unworked reaches in the above systems. There are also plans to initiate work in the Nipple Creek drainage next year.

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Figure 1 Pre restoration view of Staghorn East Fork looking downstream at Jam 27 (1+751).



Figure 2 Post restoration view of Staghorn East Fork looking downstream at Jam 27 (1+751).

UTM (NAD83) Coordinates

Kootowis Creek - Zone 10 301010E 5441122N
Sandhill Creek - Zone 10 303651E 5434396N
Lost Shoe Creek - Zone 10 306959E 5431131N
Staghorn Creek - Zone 10 310134E 5440866N

Watershed Code

Kootowis Creek - 930-300800
Sandhill Creek - 930-264800
Lost Shoe Creek - 930-260600
Staghorn Creek - 930-306400-11900