

Kootowis, Staghorn, & Lost Shoe Creek 2000 Watershed Restoration

Objectives

The objective of this project was to remove and/or rearrange extensive clusters of logging debris that had blocked or reduced the usable instream salmonid habitat, and add LWD to deficient reaches.

FRBC Region / MELP Region

Pacific / Vancouver Island

Author(s)

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Proponents

Steelhead Society, HRC
Central Westcoast Forest Society
Interfor

Funding Sponsors 2000/2001

Environment Canada, EcoAction 2000
Community Funding Program \$ 80,171

Regional Aquatic Management Society
(FishRBC) \$ 32,000

FRBC (Interfor) \$ 172,380
Steelhead Society, HRC (FRBC) \$ 76,000

Watershed / Stream

Kootowis Creek Staghorn Creek
Lost Shoe Creek Salmon Creek
Sandhill Creek

Location

The Tofino-Ucluelet Peninsula lowland is known as Kennedy Flats and is comprised of Kootowis Creek (which drains into Grice Bay), Staghorn Creek (which drains into Kennedy Lake), Lost Shoe Creek (which drains into Florencia Bay), Sandhill Creek (which drains into Combers Beach), and Salmon/Smith Creek (which drains into Ucluelet harbour).

Introduction

The problem being addressed on Kootowis, Staghorn, Sandhill, and Lostshoe Creeks is habitat impacts by logging that severely limit salmonid production. Wood waste left from

logging and shake cutting has accumulated in large piles in the stream channel. These jams are destroying the pool/riffle habitat complex. They are filling in the wetted habitat of the creek and impeding fish access. These debris piles have contributed to LWD deficient reaches between jams, and large scale flooding of the surrounding forestlands. The flooding has limited the forest regeneration to mainly scrub and willow species. Salmon Creek, draining into Ucluelet Harbour, was historically a thriving salmon stream. The lower reach has been impacted by fish access problems from hung culverts and with loss of LWD.

Assessments and Prescriptions

Level 1 and Level 2 inventories were conducted on the watersheds in 1995 and 1996 (D.R. Clough 1996). Restoration work initially began in 1996. Each year since then, work was assessed for effectiveness and presented in the Monitoring Report. The results are used to modify the following year Summer Work Plan as necessary.

Rehabilitation Work

Summer work began July 15 and ended October 4, 2000. Generally, three crews of five were employed with an overall site supervisor.

Table 1. KWRP Budget breakdown.

Sponsor	Wages	Expenses	Total
Interfor	113,667.11	58,712.62	172,379.73
FsRBC	24,679.46	7,463.00	32,142.46
EcoAction	40,573.11	38,555.98	79,129.09
Steelhead	38,469.09	37,437.97	75,907.06
Total	217,388.77	142,169.57	359,558.34

A total of 12.2 kilometers of stream length or approximately 61,000-m² area was restored. Work area was determined utilizing a risk assessment methodology (Warttig 1999) that prioritizes where work should occur. The restoration method was to remove all of the loose small wood debris (SWD) blocking the stream flow around the Large Wood Debris (LWD) and then to rearrange or add additional LWD if necessary to the benefit of salmonid habitat.

Table 2. Restoration areas and distance.

Restoration Area	Distance (m)
Staghorn Creek	4554
Lost-Shoe Creek	4130
Sandhill Creek	1069
Kootowis Creek	300
Salmon/Smith Creek	2000
Hospital Road Stream Crossings	6 - 30m ea.
Total	12,233

Helicopters were used to remove wood waste from wide floodplains but to add LWD to deficient areas. Coordinating with a nearby heli-logging show, the Helifor Vertol flew approximately fifty 5-10 m long logs (donated by Interfor and MOF) into Staghorn Creek in less than 1.0 hour.

Figure 1 Helicopter operations.



Outputs

Kootowis, Lostshoe and Staghorn Creeks: In 2000, 12.2 km of stream length was restored, with an average channel width of 5.0 meters this results in an area of 61,000 m². Maintenance was conducted on Staghorn Creeks that was previously restored in 1999. During 2000 restoration, the field crews worked on 125 debris piles removing 2,000 cubic meters of SWD and rearranging 3,500 pieces of LWD along the mainstem of Staghorn and Lostshoe Creeks. Approximately 7,000 m of cable were used to build the LWD structures and to anchor LWD in place.

Production Estimates

The habitat improved or made accessible in 2000 of 61,000 m² could produce 122,000 Coho fry based on the DFO bio-standard of two fry

per square meter. Cutthroat Trout and Chum salmon will also utilize the area. We are discussing additional monitoring components to capture more data including non-salmon benefits (ie. wildlife & riparian) with other partner groups in the area.

Proposed Work

There are plans to continue this project until all of the channel and riparian conditions are restored in the area. Currently a few tributaries of the Kootowis watershed remain to be completed along with the upper reaches of Staghorn and Lost Shoe watershed.

Figure 2 Restored area of Staghorn



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References

D.R. Clough KWRP Winter monitoring and Assessment 1996.
 W. Warttig, Draft Risk Assessment for Clayoquot Streams 1999
 DFO FISS records and BC16 escapement records (Fisheries officer notes)

Watershed Code

Kootowis Creek – 9303008, Staghorn Creek – 9303064119, Lost Shoe Creek – 93026606

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