Zymoetz Watershed Restoration Program

Aquatic Habitat Rehabilitation Works Summary Report

16-Km Side Channel (Site 54B)

Prepared for
Ministry of Environment Lands and Parks

Prepared by
Terrace Salmonid Enhancement Society

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Zymoetz Watershed Restoration: 16 Km Side Channel (Site 54B)

Objectives
The rehabilitation of this 150-m long side channel in the lower reaches of the Zymoetz River is one of at least seven in the watershed that can be enhanced to improve spawning and rearing habitat for steelhead, chinook and coho salmon.

FRBC Region/ MELP Region/ MOF Region
Skeena

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Watershed
Zymoetz (Copper) River (440-000)

Location
The Zymoetz River is bisected by Highway 16 approximately 8 km north-east of Terrace, B.C.; access to site 54B is located at approximately 16 km on the Copper Forest Service Road.

Introduction
The Zymoetz River watershed has been subjected to numerous flood events over the past three decades which, in part, were influenced by the extensive logging beginning in the early 1960s. These events have caused extensive habitat damage in many reaches of the Zymoetz mainstem.

Assessment and Prescription
A modest water flow to the lower half of this side channel is provided by a perennial flow of spring water and along with that from three small creeks. Over the winter months and during other low water periods, this water supply is subject to freezing and draining into the extensive buildup of river gravel and fines deposited by a series of floods since 1988. This, in turn, prevents adult salmonids on their spawning migration from entering the channel. In addition, the 1988 fall flood caused blockage of the surface water flow from the Zymoetz River into the channel. The result was the first large accumulation of fine sediments and gravel throughout the length of the lower 400m of the channel degrading the quality of the remaining coho spawning habitat and destroying the chinook habitat.

Rehabilitation Work
The following steps were taken beginning on March 13, 1999 when a John Deer 550 bulldozer cleared 1m of snow off of the dry channel as the first step to excavate a test channel (Photo 1):

- A Link-Belt 3400 excavator was used to dig the channel to a depth of 1.3 m at the top end to nearly 3 m where it meets the Zymoetz River (Photo 2);
- The channel was excavated 1m wide at its wetted width for a distance of 150m. The depth of the water was 10 to 20cm with flow of about 0.5cu.m/sec into the Zymoetz River. The goal was not to maximize the water flow, but to determine if a constant flow could be accessed at the lowest level of the water table. On March 27, the water flow in the channel was about triple the flow of March 17;
- The excess material was sloped back into the shape of a dike to a height of 2m to 3m with a total channel and dike width of 30m;
- The top end of the channel was diked-off to prevent surface water from entering the test channel;
- The banks of the test channel were graded back to about 2:1 slope and leveled off along the top (Photo 3);
- The channel was meandered throughout its length instead of the original straight ditch design in order to simulate a more natural configuration.
- On March 27, the screen fish barrier fence was removed and the channel was blocked off to prevent the Zymoetz River from backing into the channel.

Cost Summary

Labour	$2,618
Equipment	$5,666
Survey & Design	$2,650
Supplies	$41
Total	$10,975

Production Estimates

Productivity cannot be estimated until a final channel design is created and implemented.

Proposed Works

The following work is proposed for 1999/00 fiscal year:

- Adam Engineering Ltd. will complete a survey and design for the new channel prior to the work commencing in 1999.
- A new channel will be constructed according to the engineering design with a dike constructed across the middle flood flow entrance into the channel. Spawning riffles will be constructed, LWD and rootwads or large rocks will be placed in the channel as cover for juvenile salmonids.
- The final decision on the channel and dike design will be made by MELP and DFO staff with input from the Copper WRP Advisory Committee.

For Further Information, Contact:

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Photo 1. The location of 16-Km side channel before excavation began.

Photo 2. 16-Km side channel during the excavation.

Photo 3. 16-Km side channel after bank sloping.