West Babine Fish Passage Restoration Project – Culvert removal at 9km on the 413 Rd

Project Completion Abstract - *Fish Salvage Component*

Biological Goals of the Project

The objective of the project was to restore fish passage upstream at the site to all life stages of fish. The method chosen to achieve this was to de-activate the site through the removal of twin 500mm culverts and restore the natural stream drainage. This would restore juvenile fish access to good quality rearing habitat upstream of the site including a small lake at the head of the stream.

FIA Information

FIA Invest. Schedule. No.: NOTSA032230
Project No.: 2230006
Fiscal Year: 2003/2004

Recipient

Pacific Inland Resources – a Division of West Fraser Mills Ltd.
MoF Region: Northern Interior Forest Region
MoF District: Skeena Stikine Forest District

Registered Professionals involved in the Project

Mr. Ralph Kossman, RPBio., Silvicon Services Inc. (Smithers) supervised the initial Fish Passage Culvert Inspections in the West Babine Watershed and conducted the fish salvage operations prior to the in-stream work. Mr. Jay Baker, Silvicon Services Inc. represented the recipient and handled the administrative aspects of the project.

Project Completion Abstract Completed by:

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Project Location

The unnamed creek is a second order stream (watershed code: 480-518400) that drains into Babine Lake approximately 2.1km downstream of the crossing (UTM 09 E652612 N6108637).

Introduction and History

Silvicon Services Inc. was contracted to provide fish salvage services for this FIA funded fish passage restoration activity. The unnamed S3 stream is known to have Dolly Varden(DV)/bull trout(BT) and rainbow trout(RB) present. This site with a priority score of 41 was ranked as a high priority site for fish passage restoration following a Fish Passage Culvert Inspection project (procedures as per WRTC#11) conducted in the West Babine watershed in 2001. Fish Passage Culvert Inspections at the site determined the twin culverts set side by side were a partial barrier to juvenile fish. More specifically the culvert slopes, outfall drops and water velocities were barriers to juvenile fish seeking to migrate upstream. The West Babine watershed was identified in the *Torkelson Watershed Restoration Plan (Sept. 2001)* and the documents which preceded it; *Interim Interior Watershed Restoration Plans (October 2000)* and *Integrated Watershed Restoration Plan-West Babine Watershed (December 2000),* as a targeted, high-priority, watershed sub-basin.

Description of Completed Work

Work on the deactivation of the site began on September 4, 2003. Isolation nets were installed upstream and downstream of the in-stream work area and remained in place until all in-stream work was completed. The culvert outlet drops were deemed impassable at the time of the in-stream works due to the low outlet pool level; consequently, we conducted two salvage passes on the upstream side before we started on the downstream side. The equipment utilized was a Smith-Root 12B POW electroshocker. A dip net and pole seine were used to recover the shocked fish and transfer

them to holding buckets for recovery and identification. Minnow traps were not employed at this site. Following the recording and identification of the captured fish, they were released downstream of the lower isolation net.

Fish Salvage

The first salvage pass upstream of the site resulted in no fish captured. The second pass saw the capture of a single RB parr with a fork length of 50mm. On the downstream side, the first salvage pass saw the capture of 8 RB parr from 48 to 62 mm fork length. The second downstream pass resulted in the salvage of 9 more RB with fork lengths ranging from 45 to 65mm.

Discussion

Only one RB parr was captured on the upstream side of the site while 17 RB parr were captured below the culvert outlets during the fish salvage operations. Previous electroshock sampling by Silvicon during the initial FPCI in 2001 did not capture any fish upstream of the site. Downstream sampling conducted by Triton Environmental Services in 1998 resulted in the capture of RB approximately 200m upstream of Babine Lake. This supports the FPCI findings that the twin culverts posed at least a partial barrier to upstream fish passage, if not a total barrier the majority of the time. Removal of the culverts and the subsequent restoration of the stream channel at the site has re-established fish access to approximately 3.5-4km of good quality fish habitat upstream of the crossing site.

Monitoring

Routine Effectiveness Evaluations should be conducted at this site to assess the effectiveness of the removal of the fish passage barrier. The sampling conducted upstream of the site during the FPCI in the 2001 field season could be used as baseline information.

Photographs:

Fig.1 Fish salvage using a Smith-Root 12B POW backpack electroshocker.

Fig.2 Isolation net at downstream end of work site.

Fig.3 Measuring captured RB parr.

Fig.4 Processing RB parr captured during fish salvage operations.