

Fraser Salmon & Watersheds Program



Fraser Basin Council



2011/12 FINAL REPORT

FSWP File Number*	FSWP 11 25 XX HWRS
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* Please use the FSWP File Number provided in previous FSWP project correspondence.

1. Project Information

1.1. Project Title

Stabilizing flow, increasing juvenile Coho habitat and removal of a fish stranding issue in Patenaude Creek, Horsefly River Riparian Conservation Area

1.2. Proponent's Legal Name

TLC, The Land Conservancy of BC

1.3. Project Location

Horsefly River Riparian Conservation Area, Horsefly BC

1.4. Contact for this report

Name: Barry Booth

Phone: 250-564-2064

Email: bbooth@conservancy.bc.ca

1.5 Funding Amount

Original Approved Grant Amount:	Total FSWP Expenditures:	Final Invoice Amount:	Final Non-FSWP leveraging, including cash and in-kind:
\$13,000	\$13,000	\$3250.00	\$84,900

2. Project Summary

Please provide a single paragraph describing your project, its objectives, and the results. As this summary may be used in program communications, clearly state the issue(s) that were addressed and avoid overly technical descriptions. Maximum 300 words.

The objectives of the project were to stabilize flow, increase habitat for juvenile coho salmon and eliminate a fish stranding issue on Patenaude Creek, a small creek in the Horsefly River Valley. The project had two components: deactivating a fish trap (the terminal end of a man-made rearing channel), and consolidating the flow of Patenaude Creek to prevent the creek from spilling its banks and depositing fish in adjacent hayfields and to increase the habitat complexity of this severely impacted creek. We were able to successfully complete the deactivation of the rearing channel by filling in and planting the upper ~100 m of the channel (after fish were removed). We also installed a ground water infiltration gallery, and replaced a blocked culvert to bring additional water to the rearing channel to further alleviate the possibility of any future fish stranding in the remaining sections of the rearing channel. We were unable to complete the proposed works along the main part of Patenaude Creek because of delays in the preparation of plans for this portion of the project by DFO engineers and habitat biologists. Because of the complexity of this portion of the project, DFO opted to do an additional, detailed physical survey of the area to the east of Patenaude Creek in order to generate a precise, 3D map of the creek bed and surrounding areas. From this map, they will develop a detailed restoration plan that

will be reviewed and revised with input from local restoration ecologists and implemented, likely during the fall of 2012. In the interim, we installed over 300 sandbags along the west side of Patenaude Creek to 'encourage' this creek to carve out one, consolidated channel during this years freshet.

OPTIONAL: Please give a short statement (up to 100 words) of the most compelling activity or outcome from your project.

The most compelling part of this project relates to the partnerships that we continue to develop. As part of the deactivation of the rearing channel, we had assistance from a fisheries crew from the North Shuswap Tribal Council and a group of students from Colmneetza Secondary School in Williams Lake. We are thrilled to have worked with both groups and are expecting to work with both of them on future projects in the HRRCA.

3. Final Project Results and Effectiveness

3.1 Please copy THE EXPECTED DELIVERABLES from your detailed proposal and insert into this table. Add additional rows as needed. Then describe the FINAL DELIVERABLES (the tangible end products resulting from this work) associated with each expected Deliverable.

If FINAL DELIVERABLES differ from the original EXPECTED DELIVERABLES, please describe why, and the implications for the project.

EXPECTED DELIVERABLES	FINAL DELIVERABLES
1. Determination of quantity of habitat prior to in-stream work	Detailed assessment completed for three reaches of Patenaude Creek using Streamkeeper methodology completed (data have be collated and shared with DFO Appendix 2). Fish were also sampled using a dip net on one day to determine the distribution of salmonids in the same area. Stream flow measurements completed with assistance of DFO. In addition, TLC along with DFO sampled discharge of Patenaude Creek during three different times (August 2010, May 2011 – peak flows, a July 2012- Appendix 3). All data will be incorporated into the plans for consolidating Patenaude Creek.
2. Elimination of fish stranding issue – Patenaude Creek – deactivating terminal end of rearing channel.	Fish rescued and terminal 100 m of rearing channel filled in, sediment control mat installed and area planted (Appendix 1, 4). Further to this DFO sampled dissolved oxygen in the rearing channel if Feb 2011. From this we were able to further determine that the rearing channel provides sub-optimal habitat for over-wintering salmonids (Appendix 5).
3. Elimination of fish stranding issue – rearing channel - excavation of low parts of the rearing channel near the terminal end of the pond-	Instead of excavating the rearing channel, DFO opted on bringing in additional ground water into the rearing channel via the installation of a ground water infiltration gallery (Appendix 1). Replacing a blocked culvert that crossed the Black Creek Road will further augment the flow of ground water to the rearing channel by bringing additional flow to the rearing

	channel from a creek that runs year round
4. Increase in-stream habitat for juvenile salmon in Patenaude Creek	This component of the project was not completed due to delays in the development of a comprehensive plan by DFO. Instead, areas affected by the deactivation of the rearing channel and the infiltration gallery has been thoroughly re-vegetated. As part of this project, over 1000 m ² of the rearing channel has been covered with sediment control mats. Further, DFO has completed detailed mapping of the site in question. It is anticipated that this plan will be in place in the spring of 2012 and the work completed by the fall of 2012.
3.2 Please evaluate the EFFECTIVENESS of your project in achieving Project Objectives, using the specific measures of success identified in your proposal. Please include any notable successes or challenges.	
<p>We were successful at achieving part of our objectives.</p> <p>Measure of Success 1. Concrete data on available habitat for fish prior to manipulation</p> <p>We have collected and collated data on the available habitat for juvenile fish in Patenaude Creek. In addition, we have collected other valuable data (discharge rates on Patenaude Creek, and dissolved oxygen data in the rearing channel) that will inform future work on both Patenaude Creek and the rearing channel.</p> <p>Measure of Success 2. Patenaude Creek flows through its historic channel into the Horsefly River and not through hayfields.</p> <p>We were able to only partially meet this deliverable. We have lined the west bank of Patenaude Creek with sandbags in hopes that it begins to carve a consolidated channel this spring. We will have to monitor this situation this spring and then build the affects of this action into the overall, long-term plan being developed by DFO</p> <p>Measure of Success 3: No fish stranded in upper part of rearing channel, down-stream fish movement is facilitated</p> <p>We have eliminated the main location of fish stranding by deactivating the upper portion of the rearing channel. We have also facilitated the movement of fish by bringing additional ground and surface water into the remaining portions of the rearing channel. With the assistance of DFO we believe that we have made significant strides at dealing with one of the problematic areas of the rearing channel that was constructed by the Ministry of Environment in 2000.</p> <p>Measure of success 4. Increased quantity of fish habitat, increased abundance of coho salmon in Patenaude Creek, more complex riparian habitat.</p> <p>Actions required to achieve this measure of success will take place in the fall of 2012</p>	
3.4 If applicable, please describe project outcomes that relate to one or more of the following strategic approaches (Section 2.1 of RFP; section 8 of detailed proposal template), and include specific examples.	
Engagement of First Nations. Please specify who, and in what capacity.	We were extremely pleased that we were able to engage the fisheries crew of the North Shuswap Tribal Council. The NSTC crew came out and helped with the fish rescue and were also on site to help lay the

	sediment control mat on the deactivated portion of the rearing channel. They also assisted in the placement of sandbags along the west bank of Patenaude Creek. We expect to continue working with the NSTC into the future. They have been invited to (and have accepted) a workshop to help develop a conceptual model for the management of the Horsefly River Riparian Conservation Area. We also expect that they will be involved in further restoration work on Patenaude Creek.
Active partnerships with one or more organizations.	Once again, TLC was able to work with a number of different organizations, including DFO, NSTC, Scout Island Nature Centre and Columneetza Secondary School. An additional development has been the relationship that we have initiated with the Ministry of Transportation and Infrastructure.
Engagement and participation of diverse and under-represented groups.	
Relationship building, as a foundation for sustainable, enduring activities.	
Capacity building, including mentorship models, leadership training and skills development.	<p>Gord Sterrit from NSTC was interested in getting his crew involved in this project to help increase their capacity with respect to restoration projects. With this work we made important first steps in building this capacity. We anticipate that the NSTC crew will be working with us this coming summer/fall.</p> <p>We were very pleased that we were able to host a one-day onsite visit of the students from Columneetza Secondary School's "Students Working and Learning in Their Watershed" program. Students, along with instructors from Columneetza, Scout Island Nature Centre and DFO came out to the HRRCA and assisted in the fish rescue and also helped plant a number of trees. We expect that this program will be back in the coming year to assist with other components of work on the HRRCA.</p>
Recognition and support of champions and their initiatives.	TLC nominated Sue Hemphill, one of our community partners, for a salmon hero award.
Opportunities to influence policy and decision making,	
3.5 Please describe how the benefits of this project will be sustained and/or be built upon into the future. What are the planned next steps, or recommendations for further work, if applicable?	

TLC has a long-term commitment to the management of this project as it falls within the area of land that we own and manage. As part of this commitment we will monitor the following parameters:

1. The plantings on the deactivated portion of the rearing channel, and the areas disturbed for the installation of the infiltration gallery will be incorporated into our overall monitoring and evaluation program.
2. The water levels of the now most upstream end of the rearing channel will also be monitored over time. We installed a temporary staff gauge at the terminal end of the rearing channel and will replace it with a permanent gauge this spring.
3. We will also monitor water flow through the rearing channel and fish use of the terminal end of the rearing channel.

We fully expect that, with the assistance of DFO, we will conclude the unfinished phase of this project (the consolidation of flow and the and the complexing of the channel of Patenaude Creek) by the fall of 2012. As per above, the monitoring of this part of the project will be folded into our overall monitoring plans.

3.6. What are the top three lessons learned from this project that could be useful to communicate to others doing similar work in the Basin?

1. Planning is key to successful projects and if planning involves government, expect delays.
2. Building partnerships is key.
3. Working with First Nations is very rewarding.

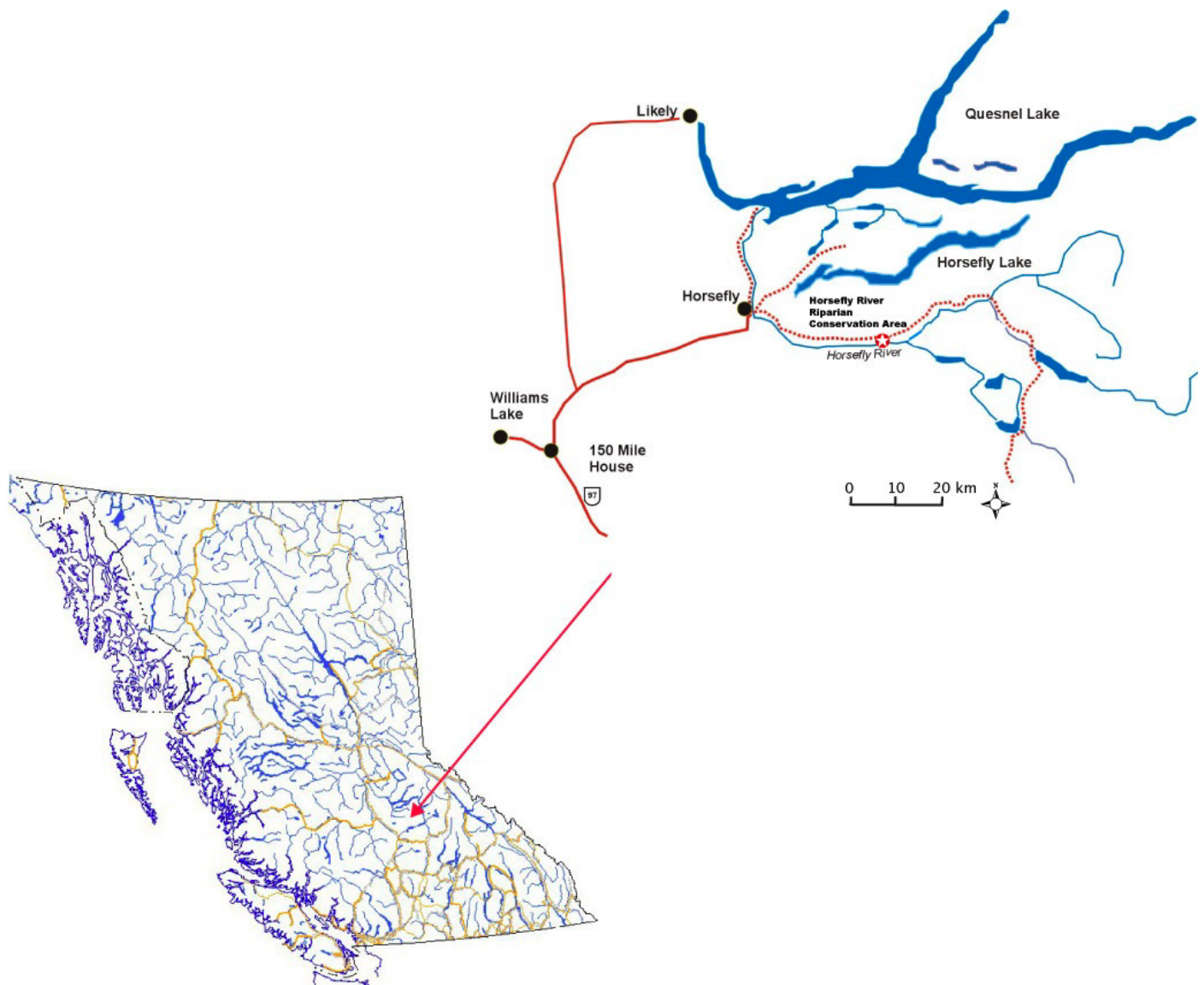
3.7 REQUIRED: Attach all DOCUMENTATION of Final Deliverables, and LIST attachments in Section 8. These may include technical reports, maps, photos, evidence of communications, lists of meeting participants, etc.

4. Outreach and Communications

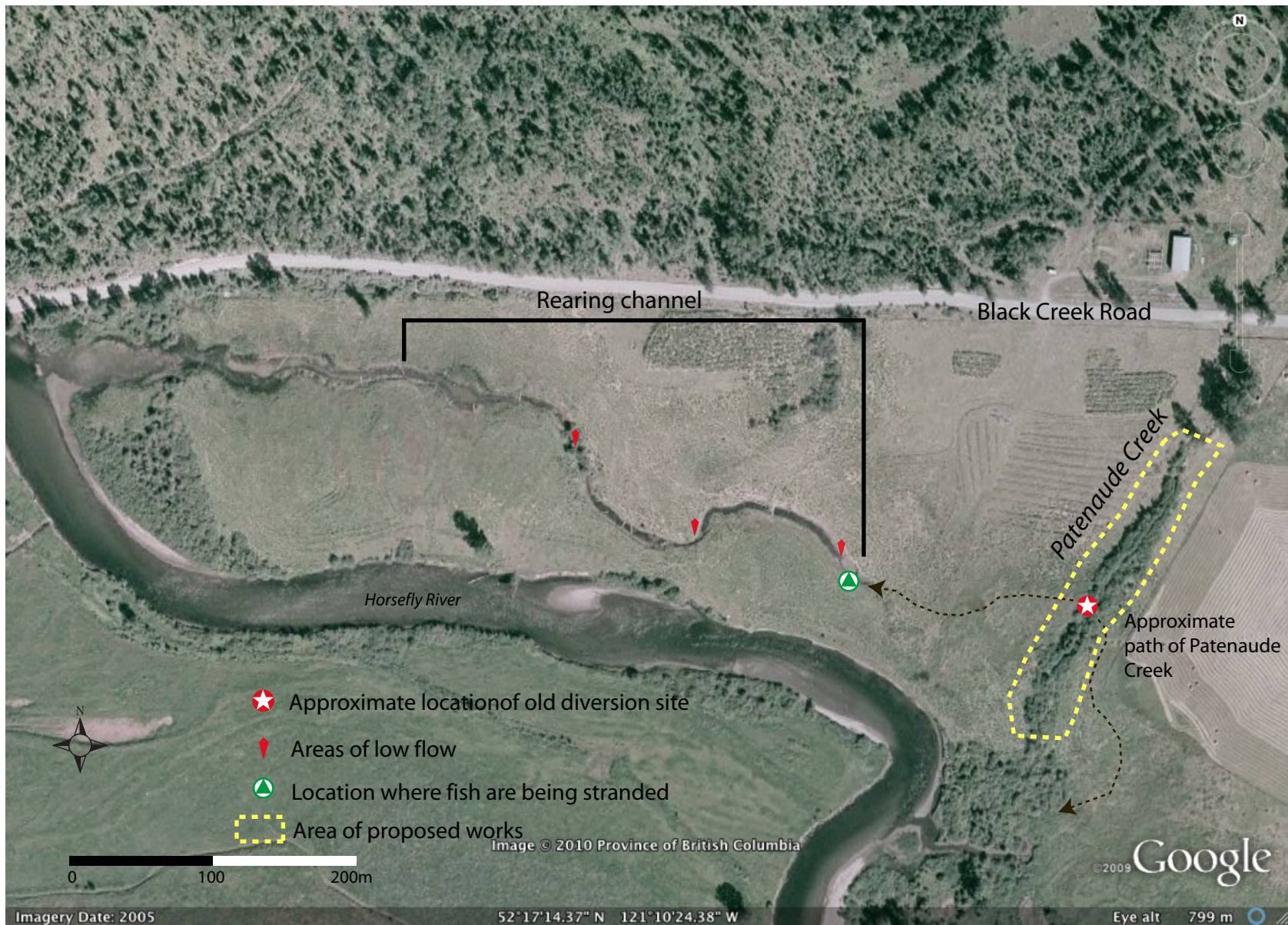
Please describe how you have communicated project activities and results within local and basin-wide communities, across organizations and/or to decision makers.

Please list and attach copies of (or links to) any communications materials from these efforts that you have not previously submitted.

Results of this information will be shared with our most relevant partners, the Horsefly River Round Table. This community-driven group is slowly ramping their efforts to conduct/direct restoration efforts in the watershed. These efforts will be valuable for the next phase of work planned by the Round Table.



HRRCA in BC context



Location of stream work and work proposed for rearing channel