

# Fraser Salmon & Watersheds Program



Fraser Basin Council



## 2009/10 FINAL REPORT

FSWP File Number\* FSWP 09 D HWRS 18

\* Please use the FSWP File Number provided in previous FSWP project correspondence.

### 1. Project Information

#### 1.1. Project Title

Evaluation of restoration activities on the 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

#### 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:
\$13,100	\$13,100	\$2620	\$16,579.02

### 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.

This project had three separate, but related components. The first was to develop an evaluation and monitoring plan to assess past and present restoration on the Horsefly River Riparian Conservation Area (HRRCA), a 300 ha property owned and now managed by TLC. This was accomplished by refining the photo monitoring project that was initiated in 1999 and establishing a number of permanent empirical sampling plots that were associated with each newly established photo points. The second part of this project was to evaluate three large construction projects that were undertaken between 1999-2007. These were where examined with the help of professional engineers and a restoration ecologist to determine what intervention, if any, is required on each of these projects. The last part of this project involved the refinement of a GIS mapping project that was initiated 2007. At this time, TLC began to construct that a mapping project that digitized the polygons originally delineated by Richard Case as part of an overview of the entire HRRCA. This year we wanted to ground-truth as many of these polygons as possible to further refine this mapping effort in order to improve our ability to manage present and future restoration efforts.

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

### 3. Final Project Results and Effectiveness

3.1 Copy EXPECTED OUTCOMES from your detailed proposal and insert into this section. Add additional rows as needed. Then please list the FINAL OUTCOMES (the tangible end products resulting from this work) associated with expected outcome.

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

EXPECTED OUTCOMES	FINAL OUTCOMES
Rigorous photo monitoring and empirical sampling protocol established. Clear and concise summary of photo monitoring plots from 1999-2009. Empirical data collected and summarized	All of the relevant previous photos from past years have been retaken. Photo point animations were completed for 6 photos. A total of 23 photo locations totaling 68 photo points were established. These were purposively located in order to effectively monitor vegetation growth. Thirty-seven (37) fixed area plots and forty-three (43) shrub intercept transects were established at these photo locations (at least 1 fixed area and 1 shrub intercept at each photo point).
Clear understanding of status of restoration efforts and increased effectiveness of future restoration initiatives as a result of Outcome #1	The above will inform this objective. We do have a much better understanding some of the sites that have not had active restoration on them since 2001.
Reports for three major projects completed with implementation plans for mitigation completed if mitigation is required	I was able to get help from DFO at three of our major projects. Mitigation was completed for one site, further work is planned for a second this spring, and the third will require closer examination before any mitigation is conducted.
Updated GIS mapping project resulting in increased effectiveness in tracking restoration efforts and needs	I visited the majority of polygons on the HRRCA. Data have been recorded on aerial photos and is being transferred to the GIS database.

3.2 Please evaluate the EFFECTIVENESS of your project in achieving Project Objectives. Please identify the indicators you have used to measure the effectiveness of your

**project. Please include any notable successes or challenges.**

In many ways this was an incredibly successful project. I was able to explore almost the entire HRRCA. Permanent sampling plots (photo, fixed area, and shrub intercept) were established in all areas where restoration work has been initiated. I was also able to re-photograph all of the original photos that pertained to relevant areas on the HRRCA. This level of examination and evaluation will be incredibly valuable for future restoration efforts on this site.

The use of photo point animations was not as successful as anticipated. This was due to the fact that: a) photos were taken using different focal lengths between years, b) photos were taken from different locations between years because there were very few permanent markers for the location of points, and c) not all photos were taken in each year. As a result, it was difficult to find a series of photos to examine using this technique. Nonetheless, I was able to construct 6 animations that both illustrates the change and/or lack thereof, at sites that were subject to restoration work and those that have naturally regenerated.

One of the most challenging, yet important aspects of this project, was the examination of the major restoration projects that were initiated in 1999-2001. Arranging site visits to these locations with DFO engineers was very difficult due to their very busy schedules. I am very grateful that Judy Hillaby from DFO acted as my point person on this aspect of this project. She worked tirelessly in coordinating site visits and reviews of these projects. Without her assistance, I would be no further ahead in diagnosing the issues at these sites. In addition, she was also able to secure funds for the mitigation of the debris catcher site, one of the most problematic of these projects. She was also instrumental in conducting the fish sampling at the rearing channel.

**3.3 REQUIRED: attach all DOCUMENTATION of Final Outcomes, and LIST attachments here. These may include technical reports, maps, photos, evidence of communications, lists of meeting participants, etc.**

TLC report on 3 projects final.pdf  
TLC detailed photo point summaries.pdf  
TLC back channel photo point summaries.pdf  
TLC original photo point summaries.pdf  
TLC photo point animations.ppt

**3.4 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?**

One of the most revealing aspects of this project was how much time was required to initially establish the photo and empirical monitoring sites. Now that these are established, they will be revisited every 2-5 years at far less cost than this initial project. Empirical sampling will be repeated on a similar time frame. One or two more additional photo points will be established, but at an earlier time due to the over-whelming influence of reed canary grass. In these locations planted hawthorn are doing reasonably well, but the amount of reed canary grass in this area in July/August was such that photos taken at the time we were working would have been ineffective to monitor their change in growth.

This exercise also illustrated that it is very difficult to construct photo point animations after the fact. It was very difficult to replicate photos taken in the past without knowledge of the type of camera and lens used. To this end, I have noted the focal length and exposure settings for each of the photos that I took this season. I have also established permanent markers at each photo point location.

In terms of the major projects, we need to seek funds to further sample the rearing channel in order to ascertain whether Coho fry are actually becoming trapped at the head cut (please see attached document). I have been in contact with researchers at UNBC to explore the idea of using a student on this project. I will continue to work with UNBC, the high school in Horsefly, and with Judy Hillaby on this

project.

**3.5 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. While time and energy consuming, monitoring is critical to restoration work

2. One has to be prepared to modify methods to meet specific needs

3. Partnerships are of vital importance to overall project success

## 4. Project Expenditures

In Part A, please list all line-items from your original proposal, and add any additional line-items for costs that were not originally budgeted. Please include more specific descriptions of services or items where possible, (e.g. the name of the company or individual contracted), and actual rates, unit costs, and total expenditures. In Part B, report the original amount budgeted per line item from the detailed proposal, and the actual FSWP and non-FSWP amounts spent. Please NOTE that FSWP does not expect actual expenditures to necessarily align with the original budget.

Part A: Actual units, rates, costs per unit, and total project expenditures to date				
Labour				
Service	# of People	Daily Rate	Total # of Days	Total Project Expenditures
<b>Labour Sub-Total</b>				<b>0.00</b>
Materials, Supplies & Equipment				
Item	# of Units	Unit Cost	Total Project Expenditures	
<b>Materials, Supplies &amp; Equipment Sub-Total</b>			<b>0.00</b>	
Administration & Overhead				
Item	# of Units	Unit Cost	Total Project Expenditures	
<b>Administration &amp; Overhead Sub-Total</b>			<b>0.00</b>	

Part B: Original FSWP budget and breakout of actual project expenditures			
Original FSWP Budget (from detailed proposal)	Total FSWP Expenditures	Total Non FSWP Contribution	
		Cash	In-Kind
<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Original FSWP Budget (from detailed proposal)	Total FSWP Expenditures	Total Non FSWP Contribution	
		Cash	In-Kind
<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Original FSWP Budget (from detailed proposal)	Total FSWP Expenditures	Total Non FSWP Contribution	
		Cash	In-Kind
<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

FUNDING SUMMARY - DO NOT FILL - FSWP STAFF USE ONLY			
Total Originally Budgeted FSWP Contributions		0.00	
Total Project Expenditures		0.00	
Total FSWP Expenditures		0.00	
Total Non FSWP Contributions		0.00	

4.1 If you have had any significant differences in spending in comparison to your original budget, please provide an explanation. Significant differences could include costs that exceed 20% of a line-item or budget category (labour, materials, administration), and new items or services that were not originally budgeted, exceeding 10% of total FSWP contribution.

No significant differences.

4.2 Please describe all non-FSWP project contributions, cash and in-kind:

Non-FSWP Contribution Sources	Letter of Confirmation Attached (Y/N)	Cash (\$)	In-Kind(\$)	Total(\$)
HCTF	N	\$5000		\$5000
DFO	N		\$7500	\$7500
Ministry of Transportation	N	\$2814.86		\$2814.86
TLC			\$3960	\$3960

## 5. Project Promotion

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

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

Reports from this project will be presented at a future meeting of the Horsefly River Round Table. On March 19<sup>th</sup>, I gave a presentation at the BC Land Trust Alliance meetings in Naramata on the need for, and the means by which to conduct monitoring and evaluation in relation to the management of land owned by land trusts. I am currently drafting a monitoring and evaluation framework for all of TLC.

## 6. Further Comments

Please provide any further comments including recommendations for future efforts and suggestions for helping partners to meet the goals of the Fraser Salmon and Watersheds Program.

## 7. DECLARATION

Please complete the following declaration:

I, Barry Booth, hereby declare that:

- 1) The information provided in this report, including all attachments is accurate to the best of my knowledge and that I am authorized to sign on behalf of the stated proponent organization;
- 2) the information contained in the above financial statement submitted by us to PSF, is accurate in all material respects and is net of any GST Input Tax Credit received or receivable by us and that the funds were used exclusively for the project as originally proposed or as formally amended by PSF;
- 3) **Any funds previously paid to the Proponent by the Foundation have been used to fund project expenditures approved by the Foundation and in full compliance with the Regulation on the Use of PSF Grant Funds and Reporting Procedures set out in the Application for Funding submitted by the Proponent to the Foundation;**
- 4) **The balance of any funds previously paid to the Proponent which were not used as set out in item 3 have been returned to the Foundation;**
- 5) **Any additional funds paid to the Proponent by the Foundation will be used in this manner.**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

(Authorized Signatory)

Name: \_\_\_\_\_

(Print Name)



## 8. Appendices

**REQUIRED:** attach all DOCUMENTATION of Final Outcomes, listed above in section 3.3. These may include technical reports, maps, photos, evidence of communications, lists of meeting participants, etc.