

Fraser Salmon & Watersheds Program



Fraser Basin Council



2008 Final Report Template

FSWP File Number*	07350-35/FSWP 08 HPR D48
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*Please use the FSWP File Number provided in previous FSWP 2008 project correspondence

Contact Information

Sponsoring Organization's Legal Name

Salmon River Watershed Society

Are you a federally registered Charity, Non-profit organization or Business (Yes /No)?

If yes, please indicate which.	<input type="checkbox"/>	Charity	<input checked="" type="checkbox"/>	Non-profit organization	<input type="checkbox"/>	Business
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Registration number		GST number	898452 958RP0001
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Are you a registered Society (Yes / No)?	yes	Society Registration number	S-32931
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Mailing Address

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¹ All correspondence will be directed to the Project Manager.

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Name:	Affiliation:
Phone: ()	E-mail:

Project Information

Project Title

An Assessment of the Values and Effectiveness of 15 years of Streambank Stabilization and Riparian Restoration Activity in the Salmon River Watershed

Project Location

Salmon River Watershed

Amount Requested	\$20,000	Total Project Value	\$23,853	Non-FSWP funds²	\$36,478
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² Non-FSWP funds include both cash and in-kind funding. In-kind funding refers to all non-cash contributions such as equipment, supplies, labour, etc. Please refer to Budget Section for further details.

Project Summary

Please provide a single paragraph describing your project, its objective, and the results. As this summary will be used in program communications, clearly state the issue addressed and avoid overly technical descriptions. Do not use more than 300 words.

Several hundred individual restoration sites have been undertaken on the Salmon River since the SRWR began developing its watershed restoration partnerships in 1993. The assumption to date has been that completed restoration sites have incrementally contributed to a process of watershed restoration. Partnership building based on this assumption has now involved over 2000 individuals including agencies, landowners, First Nations, industry, citizens and NGOs. Attitudes and practices appear to have changed during this period perhaps for a variety of reasons. The vast majority of restored sites appear to have been successful from a technical point of view. Assessments of key features show quite clearly that these sites generally contribute to watershed integrity rather than detract from it. A few sites (approximately 3%) have been identified operationally as failures. Most of this small number of sites appear to have failed due to partnership issues rather than technical shortfalls, emphasising the importance of human behaviour. Meanwhile measurable progress is being made toward the goal of restoring riparian health on the Salmon River since 1993. The process of undertaking restoration sites on the Salmon River continues and the original list of sites is now nearly halved. However site performance and restoration values have not been assessed at a watershed scale.

Although far from complete, this collective effort towards watershed sustainability seems to demonstrate our collective capacity to change how we see and act regarding fish and fish habitat issues at a watershed level. Individual project actions fit within this context as we approach a 1991 goal of restoring the majority of severely eroding sites and begin to see corresponding changes in fish habitat and human behaviour that has resulted incrementally from these undertakings.

In terms of improvement to local stewardship practices growing participation and improved practices in our program over the past 16 years suggest a shift in human behaviour toward more proactive approach of caring for the riparian areas along the Salmon River and its tributaries. Local Stewardship practices and perspectives were polled using a subset of 52 restoration projects and 34 landowners to comparing past practices to present practices as well as awareness and willingness to undertake beneficial practices.

The 2008-09 review results suggest that stewardship and restoration activities have been effective tools to promote salmon and salmon habitat. This is based on a correlation evident between awareness, attitude, values, and land practices suggesting that a shift toward more sustainable practices has accompanied the extensive streambank restoration process that has been undertaken. In addition, an increase in habitat values at restored sites correlated well with increasing age of the site restoration structures to date, suggesting that as assumed habitat features continue to improve at most sites for at least 15 years following restoration.

This assessment of site condition and human attitude reinforces the idea that a policy driven more by social marketing

than streambank reconstruction will be an important switch to make once the main benefit from achieving streambank recovery at a watershed scale has peaked on the Salmon River. This study suggests that an inventory of remaining sites should be completed, a completion goal specified, and that a planned transition that emphasises social marketing techniques and de-emphasises the need for extensive bank reconstruction be undertaken as the threshold is approached on the Salmon River, which appears feasible within a decade.

OPTIONAL If your project lends itself to sparking interest through a compelling sound bite (for potential use in FSWP media communications); please tell us what that sound bite would be. Do not use more than 150 words.

Species and life stage(s) the project targets: please list

Coho: Spawning, incubation, rearing
 Chinook: Spawning, incubation, rearing
 Sockeye: Spawning, incubation
 Rainbow: Spawning, incubation and rearing

Watershed(s) the project targets: please list

Undertake a review of restoration activity at key fish habitat locations and the relationship between behaviour change in landowners and their beliefs and actions regarding the value of improving and protecting salmon and salmon habitat

Project Deliverables and Results

- Paste in the deliverables outlined in your Detailed Proposal (question #3 under project 'relevance and significance' heading) into the table below. Then, please list the results associated with each deliverable.
- Please include copies of any relevant communications products (brochures, posters, videos, website addresses etc.) resulting from this project.

Deliverable	Result
60 key restoration sites assessed;	52 key sites were assessed covering an age span of 10-15+ years since restoration work was undertaken
The outcome of the 2008 assessment will be an effectiveness evaluation of a subset of existing restoration activities undertaken on the Salmon River including a review of key habitat features and human perspectives.	Effectiveness evaluations were undertaken by scoring key features at each site including vegetative recovery, structural integrity, hydraulic function and fish habitat value at each site. Landowner perspectives were scored in terms of ability (awareness and cooperation) and willingness (to provide resources) to support streambank and riparian management BMPs.
A watershed overview of river erosion was undertaken in 1995 that will act as a benchmark inventory of how much work needed to be done and how much progress has been made.	An aerial survey undertaken during July, 08 in cooperation with DFO captured a current view of riparian vegetation and streambank erosion in a digitized air photo series that can be compared with the 1995 benchmark in the future. In addition, at ground level 8 Coho were radio tagged to begin to document preferred spawning locations.
The proposed assessment process will help determine where the law of diminishing returns might be expected to trigger a transition from a more intensive to a less	A series of indicators was amalgamated into an index that will be used to monitor watershed conditions and will provide a signature sufficient to notify assessors of the

<p>intensive management model. Based on field review results it may be possible to identify the threshold that triggers justification of a reduced activity approach at 55%, 70% or 85% of sites completed? This project will produce results that are transferable to other similar situations in other watershed projects seeking to develop short medium and long terms goals that are realistic, achievable, and measurable. In addition it will begin to address perception change amongst project participants to determine behaviour change and attitude that related to the “think salmon” initiative of the FSWP.</p>	<p>transition away from a riparian restoration approach dominated by extensive streambank restoration activity toward proactive preventative action using social marketing approaches to protect riparian and streambank values</p>
<p>The goal of this site monitoring process is to develop operational guidelines, priorities and objectives rather than to undertake rigorous scientific research. Site by site assessments will be undertaken using standard biophysical assessment methods including field assessments and overview mapping. Structural integrity, fish habitat, riparian re-vegetation and hydraulic function features of the selected restoration sites. Sites will be classified by treatment type, key features, age and stage of recovery as compared with pre treatment conditions and recovery potential benchmarks. Comparisons will be made between conditions before, and after restoration.</p>	<p>One objective of the SRWR Watershed Sustainability Plan of 1995 as part of its “Healthy River” goal is to “restore a healthy riparian corridor” This has been pursued for over a decade with considerable collective success. By assessing sites in terms of structural integrity, fish habitat, riparian re-vegetation and hydraulic function, by comparing the number of sites completed to the number remaining and by monitoring a series of indicators it will be possible to know when that operational guideline can be transitioned to less vigorous methods such as social marketing. Site assessments showed that the habitat and structural values increased quite dramatically in the first 5 years following restoration then continued to increase but more slowly to the 15+ year timeframe.</p>
<p>Local Stewardship practices will be assessed by comparing past practices to present practices using questionnaire and interview techniques from a subset of participants. Correlation will be made between awareness, attitude, values, and land practices. Cost effectiveness and willingness to pay concepts may also be applied if feasible to help determine value assigned to habitat features and conditions.</p>	<p>The perceptions and willingness to participate of a subset of 34 landowners was used to determine awareness attitude and values. Scores on ability (awareness) and willingness (to provide resources) increased with landowners according to the age of their restoration site suggesting that confidence in the methods and practices being demonstrated at the site increases with the age of the site as its benefits become evident and continues, at least to the 15+ post-restoration year. .</p>
<p>Assumptions about restoration effectiveness and Stewardship awareness and practices and landowner commitment levels will be queried and reviewed to help determine the value of activity to date and how to become more effective in the future with education and restoration activities.</p>	<p>The value of activity to date appears validated, however the findings also highlighted the importance of having a transition plan calibrated and ready so that social marketing can be appropriately and efficiently integrated to overtake the practice of using streambank restoration “demonstration projects” en mass as an education tool when the law of diminishing returns applies at some time in the future (probably within a decade at present rates of restoration activity).</p>

Project Effectiveness

Please evaluate the effectiveness of the project, using the objective standards, quantifiable criteria and/or quality control measures identified in your Detailed Proposal (under question #1 in the ‘performance expectations’ heading).

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What are the top three lessons learned from this project that would be important to communicate to others doing similar work throughout the Basin?

- We need to establish a goal so we know when streambank restoration activity can be traded in for social marketing and passive, preventative approaches such as fencing and planting as the main driver for riparian health...know when recovery has been achieved
- We still need to find more effective ways to improve water management practices in concert with riparian restoration action; even though it appears that riparian restoration is progressing well, water management issues are proving more difficult to address.
- A small scale social marketing pilot project is needed to begin linking the value of riparian restoration activity in the watershed to a willingness to support maintenance of healthy riparian once it has been restored.

Project Effectiveness

Please describe how your project has addressed each Priority Activity identified in your Detailed Proposal.

Priority Activity ¹	How the Priority Activity has been Addressed
Assess streambank restoration effectiveness and human perception of its value.	Local Stewardship practices and perspectives were polled using a subset of 52 restoration projects and 34 landowners to comparing past practices to present practices as well as awareness and willingness to undertake beneficial practices. Site assessments showed that the habitat and structural values increased quite dramatically in the first 5 years following restoration then continued to increase but more slowly to the 15+ year timeframe. The perceptions and willingness to participate of a subset of 34 landowners was used to determine awareness attitude and values. Scores on ability (awareness) and willingness (to provide resources) increased with landowners according to the age of their restoration site suggesting that confidence in the methods and practices being demonstrated at the site increases with the age of the site as its benefits become evident and continues, at least to the 15+ post-restoration year.