

## **Project Sponsor**

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Additional Partners: People for Puget Sound, Green Horse, Land Owners - Double T Equestrian Center; Krystal Acres Alpacas; States Ranch Inn

## **General Project Information**

Project name: Garrison Creek Watershed Restoration

Three-Year Work Plan Reference: New

Preferred funding source: SRFB

Project type: Assessment

Project location: 36N, 4W, S36

Approximate project size: Approx. 200 acres.

Project history: Four years ago, residents of WRIA2 generally believed that no salmonid stocks spawned in the islands. Stream flow data were sparse and in-stream flow rules did not exist, and the diversion of streams for recreational / landscaping ponds and other uses proceeded with little notice or concern. Results of our Army Corps-financed watershed inventory of Orcas and Lopez Islands (2004-2005) have begun to change this situation, and completion of the study by including San Juan Island (RND 07 SRFB-funded), the second largest and most populous island in WRIA2, is an essential step towards mobilizing public awareness and political commitments to stream protection and restoration.

Our prior study found evidence of salmonid spawning in seven Orcas Island streams, all of which face three types of serious threats to the survival of their salmonid stocks:

- County roads and private driveway culverts that are full or partial barriers to fish passage because they are perched, undersized, and/or too steep. These barrier culverts often block access to critical spawning or rearing habitats, abbreviating the amount and quality of habitat available to salmonids in the watershed.

- Diversion and/or impoundment of stream flows for recreational ponds that reduce downstream flows, compromise water quality, impede fish migration, and, in some instances, remove the perennial source from a stream.
- Clearing of shading and stabilizing riparian vegetation from parts of the stream channel especially near residences and roads, resulting in higher water temperatures, reduced bank stability, an increased presence of non-native invasive plants, reduced allochthonous inputs, reduced small and large woody debris recruitment, and reduced water quality.

In WRIA 2 SRFB RND 07 Wild Fish Conservancy received funding to complete additional watertyping and spawning surveys. As a result of this funding WFC was able to identify several restoration opportunities in the Garrison Creek watershed. In February 2008 WFC and KWIAHT met with local landowners to discuss the watertyping results and determine if local landowners were willing to collaborate with WFC and KWIAHT on a watershed restoration project. With an enthusiastic “go ahead” from the landowners in the watershed we are now seeking funding for project feasibility and design.

**Habitat limiting factors addressed:**

To create pasture and crop fields, some reaches of the ~1500 acre Garrison Creek watershed were simplified, ditched, and likely relocated. At present the middle portions of the valley which historically supported a complex configuration of beaver ponds has been simplified into a single drainage ditch. The riparian corridor in this ditched segment of the channel is dominated by a monoculture of reed canary grass which is choking the channel. Changes in the hydrologic regime have resulted in drainage problems and intermittent summer flows on the valley parcels. At least one of the valley parcels is currently being used as pasture for the Double T Equestrian Center. Existing pasture access culverts for the Double T ranch may exasperate the drainage problems by artificially raising the water level controls. Livestock access and grazing in mucky areas have decreased land and water quality, compacted soils, and increased soil erosion and runoff. Clearing of the stream channel and adjacent riparian areas throughout the valley and at the mouth on the Krystal Acres Alpaca Ranch has resulted in high summer water temperatures and insufficient riparian tracts. Consequently, the Garrison Creek channel, ponds, and wetlands are severely lacking in LWD, instream habitat complexity, shade and cover. In addition, in the upper portions of the valley, on the States Inn Ranch (bed and breakfast/alpaca/sheep farm), a set of perched culverts may prevent or impede upstream migration and non-native Japanese Knotweed has been introduced.

The Garrison Creek project ties into local watershed recovery efforts by restoring watershed ecosystem processes. *The San Juan Island Recovery Plan* states:

“The geographic location of the San Juan Islands and their diverse nearshore and marine habitats provide a productive ecosystem that is essential for many life history stages of salmon. The nearshore provides critical habitat for salmonids, forage fish and the invertebrates on which they feed. Due to the large shoreline-to-upland area ratio and the geology of the islands, **upland areas contribute significantly to nearshore ecosystems and processes. Most sediment delivery to the nearshore is contributed by upland areas** rather than by feeder bluffs. Frequent small freshwater inputs can greatly affect water quality, particularly in the shallow and protected marine waters of the islands. Because of the significant influence of the tides and the uncommonly direct potential effects from upland use and development on the nearshore, the main organizing

**principle in the islands for maintaining ecosystem processes and functions is the watersheds and their adjoining shorelines.”**

“The Puget Sound Technical Recovery Team states that protecting existing habitat and the ecological processes that create it is the most important action needed in the short-term to increase the certainty of achieving plan outcomes. Protection must occur in both urban and rural areas if we are to ensure the long-term persistence of salmon in Puget Sound”, *Puget Sound Recovery Plan*, p. 354. “The San Juan Islands’ Plan is based on an ecological process-based approach that links upland, shoreline and marine areas...Habitat and habitat-forming processes important to protect include: sediment transport processes and features (banks and bluffs), freshwater inputs, eelgrass meadows, tidal marshes and sand pits, beaches and backshore areas, water quality, forage fish spawning beaches, and kelp beds. San Juan Island, p. 171

**Project Description**

Most regulations take a blanket approach to (*salmonid*) protection and are not often tailored to the unique characteristics of an individual parcel or the broader cumulative needs of the watershed. (Puget Sound Recovery Plan, p 358). The goals of this project are to: 1) develop and evaluate a suite of restoration alternatives in the Garrison Creek Watershed which are tailored to individual landowner and parcel needs and 2) encourage farm managers to voluntarily implement ecologically sound solutions which will improve salmonid habitat and restore watershed processes (to the extent possible while maintaining agricultural land use) by providing “a variety of restoration options”, labor and technical support, and assisting in securing implementation funding. Project objectives for Phase I (Salmon Recovery Funding Board) are to perform extensive topographic and discharge surveys of the Garrison Creek valley to evaluate the present flow regime; develop ecological sound solutions for restoring the lower Garrison Creek floodplain processes and develop a suite of watershed restoration alternatives (requiring a range of commitments from landowners) tailored to individual landowner and parcel needs; provide landowners with a technical and labor team of fisheries biologist, wetland biologist, hydrologist, and geengineers who will collaborate with the land owners to further develop good land stewardship actions and refined salmonid restoration plans unique to their farms; and collaborate with the project partners, including landowners, to develop (and seek funding to implement) a cohesive restoration plan for the Garrison Creek valley.

Current floodplain water-quality and fish-species composition and distribution data will be incorporated in this feasibility study. WFC will present the evaluated restoration-alternatives to project collaborators, and seek consensus on selecting appropriate alternatives. Upon final selection, WFC will develop construction designs for Phase II of the project. This project will create direct spawning and rearing benefits for all life stages of cutthroat trout and potentially coho, chum, and sea-run cutthroat as well. Juvenile and sub-adult chinook would also benefit from improved water quality in the nearshore environment.

**Community Support**

This project is unique because of the number willing contiguous landowners (6 total, encompassing approximately ~5,000 contiguous feet of stream channel) in one watershed who are willing to implement restoration actions. The project is innovative because it encourages volunteerism through choice and is tailored to individual landowner and parcel needs. While Wild Fish Conservancy will be working with individual landowners, the group of landowners

will also meet to discuss how individual landowner restoration actions will affect the entire watershed.

**Project Cost, Budget, and Funding Request**

Provide an approximate total project cost, budget for major project elements, and total funding request. Also indicate approximate value of sponsor match as percentage of total project cost; note the source of any match cash or in-kind match.

Budget Item	SRFB Funds	Other Land Owners	Total
Salaries & Benefits	75,500		
Travel	5,770		
Contracted Services	114,000		Geotechnical, hydrological, and biological modeling specialist
Equipment/Materials	4,350	3,700	
In-Kind Match (Labor)		7,000	
Grant (USDA potential)		25,000	
<b>TOTAL</b>	199,620	35,700	<b>235,320</b>

Provide the approximate start and end dates of the project (month and year).

Start date: 1/2009

End date: 6/2011