

FINAL PROJECT REPORT

FOR

Grant Agreement G1400401

Samish River Natural Resource Stewardship Program

Skagit County Public Works

Total Cost of Project: \$375,000.00

Grant or Loan Amount: \$281,250.00

Project Start Date: November 1, 2103

End Date: October 31, 2017

 \_\_\_\_\_ 12/27/17  
Emily Derenne, Project Manager      DATE

**Samish Natural Resource Stewardship Program  
Skagit County Public Works  
Grant Number: G1400401**

**Start Date: November 1, 2013 | End Date: October 31, 2017  
Final Total Project Cost: \$375,000.00  
Final Ecology Grant Contribution: \$281,250.00**

**Project Description**

This project provided funding for the Natural Resource Stewardship Program in the Samish watershed due to the increased emphasis to address the fecal coliform issues there. This program allowed for the installation of riparian buffers, livestock exclusion fencing, introduced species control, livestock bridges, channel restoration including bank stabilization, and maintenance. It also provided technical assistance in the form of restoration and maintenance plans.

Funding focused on the Samish River watershed to address temperature, dissolved oxygen, and fecal coliform. This includes working to address overall watershed health and the enhancement of riparian forests. In a few cases funding was used outside of the Samish watershed, with prior Ecology approval.

**Project Accomplishments**

This grant was used to assist 17 landowners on almost 23 acres. It includes the installation of 28 pieces of LWD, 13,594 native plants, and 0.63 miles of fencing, and maintenance on three previously completed projects. This funding allowed the leverage of other dollars including County’s Drainage Utility Assessment and Pollution Identification and Correction (PIC) funding. The County partnered with Skagit Fisheries Enhancement Group, the Samish Land Trust, and the Samish Indian Nation to complete NRSP projects with this grant.



Shaun Tawes, lead operator for Environmental Services, examining the Park project before bank stabilization and planting.



Hornbeck project prior to invasive control and replanting.

**Project Deliverables**

Project deliverables defined in the agreement with the Department of Ecology are below. Each of the seven deliverables was exceeded.

Task	Required	Completed
Site Visits (with initial plan started)	10	26
Restoration Plans	10	15
BMPs installed	20	56
Native Plants	5,000	14,955
Acres of Buffer	12	22.64
Feet of Fencing	2,000	3,080 (0.63 miles)
Feet of Stream	7,000	10,585 (2 miles)

## Water Quality Improvements

- The County planted almost 15,000 native plants on streams, which will have a direct impact on stream temperature as they continue to mature.
- The 0.63 miles of fencing installed will reduce the potential for fecal coliform inputs to enter the streams. The installation of native plants will continue to assist with filtration to further reduce fecal coliform inputs.
- The installation of 28 pieces of large woody debris (LWD) will reduce fine sediment input from bank erosion that is exacerbated by little to no root integrity on the adjacent bank. Also, the installation of LWD provides channel complexity which can reduce bank erosion by slowing the velocity of the water along the bank.

## The Next Step for Continued Success

Skagit County should continue working on small restoration projects like this. It builds community involvement while also bettering the environment. The County has routinely been applying for grants from other funding agencies to continue the program and has dedicated \$50,000 of its own funding to continue the program.

## Lessons Learned

Over the years we've learned that coordination is key. Working with the landowners early to make sure they understand the program's process and each of the steps, has proven to result in better projects and happier landowners.

Also, asking for more doesn't hurt. Rarely were we able to secure buffers larger than 35 feet, but occasionally we were able to get portions of the buffer to increase in size.

## Project Specifics on following pages

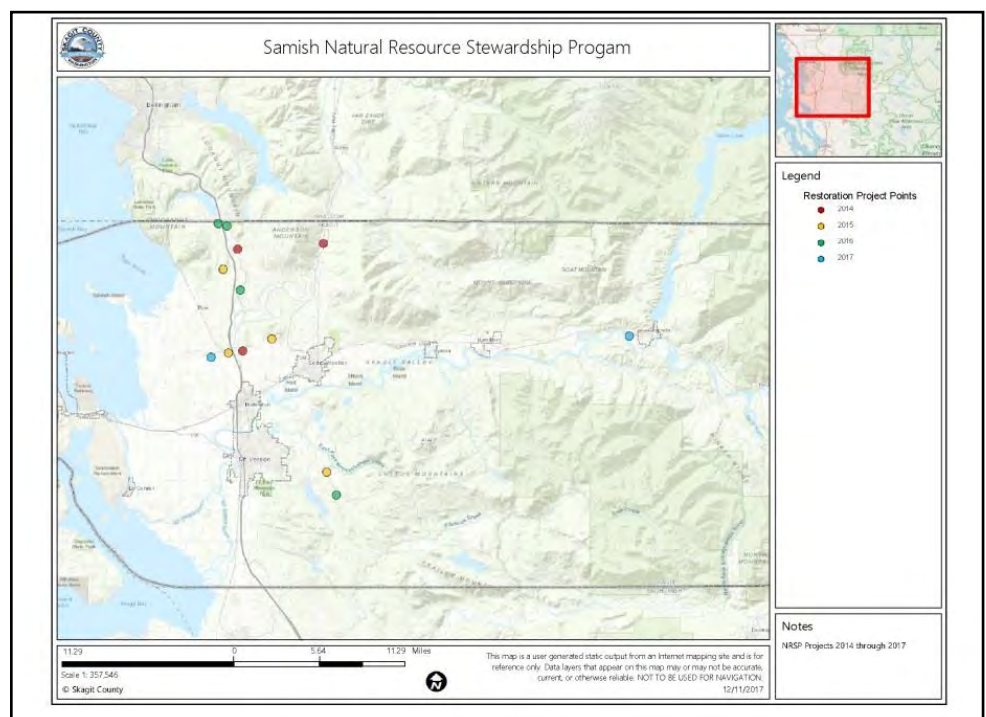
Attached to this document are write-ups for each project completed. Three projects were maintenance for invasive plantings on project previously funded by Ecology and therefore do not have a completed write-up.

## Recipient Contact Information

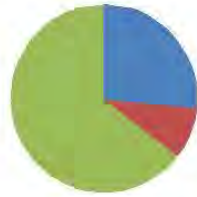
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[www.skagitcounty.net/nrsp](http://www.skagitcounty.net/nrsp)



# Natural Resource Stewardship Program 2014



**Project Funding**

- Department of Ecology
- Clean Water Program
- Drainage Utility

## Unnamed Creek Samish Watershed

**Final Project Cost:** \$93,054.91

**BEFORE PROJECT**



**AFTER PROJECT**



### Project Description

This project worked to enhance the riparian area by increasing the channel complexity and flood storage. Native vegetation was planted, large woody debris (LWD) was installed to increase sediment storage, and the sediment was removed from the creek to reduce flooding into the landowner's garage and laundry room. This project was a joint effort between Skagit County's Drainage Utility (funded channel re-route and LWD) and the Natural Resource Stewardship Program (NRSP). NRSP funding was provided for by Department of Ecology (DOE) and Skagit County's Clean Water Program and paid for all of the site preparation, invasive removal, native plantings, and on-going maintenance. The total cost of NRSP's portion was \$36,076.11.

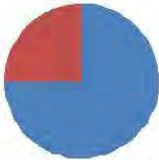
The floodplain restoration and LWD installation was completed by Skagit County's Environmental Services crew. Skagit Fisheries Enhancement Group (SFEG) completed the large planting. This project was implemented in 2014 and planting maintenance was scheduled to continue through 2017, however, the creek downcut resulting a lower water table and poor survival rate. The project will be maintained through 2018.

### Vicinity Map



# Natural Resource Stewardship Program

## 2014

 <p style="text-align: center;"><b>Project Funding</b></p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Department of Ecology</li> <li><span style="color: red;">■</span> Clean Water Program</li> </ul>	<h3 style="margin: 0;">Samish River</h3> <p style="margin: 0;">Samish Watershed</p>
<p><b>Final Project Cost:</b> <span style="float: right;">\$23,861.04</span></p>	



### Project Description

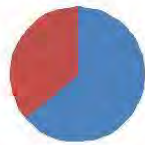
This project worked to improve riparian and instream habitat along a tributary to the Samish River and address the establishment of Himalayan blackberries on the landowner's property. Also, in an attempt to stabilize the bank, discourage erosion and prevent an older Douglas fir from falling over as a result of that erosion, 2 pieces of large woody debris (LWD) were installed. The planting of native plant species was completed by Skagit Fisheries Enhancement Group (SFEG) and community volunteers. Skagit County installed LWD in 2014 and 2016. This project was implemented in 2014 and had maintenance through 2017. Replanting occurred in 2017 to bring the total count back to 100% of the original planting. The after photo was taken in 2016.

### Vicinity Map



# Natural Resource Stewardship Program

## 2015



**Project Funding**

- Department of Ecology
- Clean Water Program

## Samish River

### Samish Watershed

**Final Project Cost:** \$ 40,196.17

**BEFORE PROJECT**



**AFTER PROJECT**



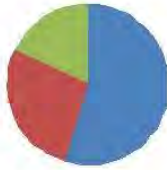
### Project Description

This project was designed to control invasive plant species and stabilize an area along the Samish River that was prone to erosion. Bank stabilization techniques were used along with the replanting of native vegetation. Reed canary grass and blackberries were mowed down, and Japanese knotweed was treated with herbicide. About 150 native trees and shrubs were planted, and 200 willow whips were installed on an area of approximately 0.25 acres. Due to beaver activity in the area, trees were protected with tubes and willow protected with spiral wraps. Five large woody debris structures were installed to reduce bank erosion and provide stabilization. Log structures were installed by the County's Environmental Services crew. Planting was completed by Skagit Fisheries Enhancement Group. Maintenance to control invasive species will continue through 2018. The after photo was taken after a high-water event, replanting along the bank occurred but is not pictured.

### Vicinity Map



# Natural Resource Stewardship Program 2015



**Project Funding**

- Department of Ecology
- Samish Indian Nation
- Clean Water Program

## Thomas Creek Samish Watershed

**Final Project Cost:** \$ 67,752.31

**BEFORE PROJECT**



**AFTER PROJECT**



### Project Description

Skagit County in partnership with the Samish Indian Nation worked to fence out livestock from riparian zones, eradicate invasive plant species, and to revegetate an area along Thomas Creek and two unnamed tributaries to Thomas Creek. Large woody debris structures were installed to reduce the introduction of fine sediments, and to provide better connectivity with Thomas Creek. Skagit Fisheries Enhancement Group was hired to install approximately 650 feet of fencing along the creek to exclude goats. Himalayan Blackberry and reed canary grass were treated. Native deciduous trees and shrubs were planted on two acres between F&S Grade Road and Thomas Creek totaling 1,375 plants. Maintenance to control invasive species is ongoing.

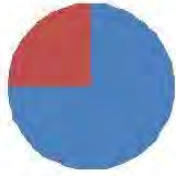
This landowner enrolled the majority of the property into the Conservation Reserve Enhancement Program (CREP). That acreage and cost is not reflected here.

### Vicinity Map



# Natural Resource Stewardship Program

## 2014



**Project Funding**

- Department of Ecology
- Clean Water Program

## Thomas Creek

Samish Watershed

**Final Project Cost:** **\$15,189.61**

**IMMEDIATELY FOLLOWING PLANTING**



**PROJECT IN 2017**



### Project Description

This project's goal was to restore native species diversity of wetland and riparian forest of Green Road Marsh. This 44-acre property consists of restored ponds that remain flooded throughout the year along the north and serves as a tributary to Thomas Creek. Planting occurred in 2 phases. A total of approximately 1,835 native plants were installed in three zones. The goal of the first zone was to maintain a breeding area for amphibians, and a refuge for waterfowl while providing shade during the summer months. The goal of the second zone was to increase shrub and deciduous tree species cover while maintaining some open areas to create a diverse riparian area of woody, shrub and herbaceous species. The goal of the third zone was to establish riparian habitat that will shade out the reed canary grass infestation.

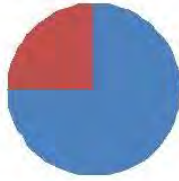
The planting was completed as a volunteer effort, led by the Skagit Land Trust, in honor of Ric Boge. None of that volunteer labor is reflected in the total cost. Maintenance is ongoing and will continue through 2018.

### Vicinity Map





# Natural Resource Stewardship Program 2016



### Project Funding

- Ecology
- Clean Water Program

## Wildes Creek Samish Watershed

**Final Project Cost:** \$ 17,974.78

### Project Photo



## Project Description

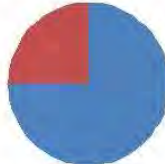
This project was focused on livestock exclusion for an unnamed tributary of Wildes Creek and a small wetland. Approximately 1,430 linear feet of fencing was installed. A total of 180 native plants were installed as well. This project was completed in March of 2016.

## Vicinity Map



# Natural Resource Stewardship Program

## 2016

	<p><b>Project Funding</b></p> <ul style="list-style-type: none"> <li>■ Department of Ecology</li> <li>■ Clean Water Program</li> </ul>	<h2 style="margin: 0;">Bear Creek</h2> <p style="margin: 0;">Samish Watershed</p>
		<p><b>Final Project Cost:</b> <span style="float: right;">\$ 25,157.12</span></p>

<p><b><u>SITE PREP</u></b></p> 	<p><b><u>AFTER</u></b></p> 
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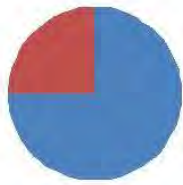
### Project Description

This project focused on the stabilization of the left bank of Bear Creek. The bank was eroding towards the District's waste water treatment ponds. The County installed 10 pieces of LWD to reduce erosion while also benefitting fish habitat. The project site included planting along 500 linear feet of Bear Creek and installing 380 native plants on 0.2 acres. The bank stabilization work was completed during the summer of 2016 by the County's Environmental Services Crew. This project was completed in November 2016 by Skagit Fisheries Enhancement Group when they planted and tubed the site. Maintenance will be on-going through 2019.

### Vicinity Map



# Natural Resource Stewardship Program 2016



## Project Funding

- Ecology
- Clean Water Program

## Tributary to Padilla Bay

Padilla Bay Watershed

Final Project Cost:

\$ 6,389.62

### Project Photo



## Project Description

The landowner at this project site had three horses that used a pond on the property for swimming and drinking. The pond connected to a ditch network that flowed to Padilla Bay. The landowner approached the County and requested that the pond be fenced to exclude the horses, in an effort to reduce fecal coliform inputs into the Bay. The landowner donated some materials, which are not reflected in the total project cost.

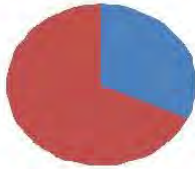
In total, the 0.26 acre project installed 440 feet of no-climb horse fence and 175 native plants. This project was completed in September of 2017 by Skagit County crews. Maintenance will be on-going through 2020.

## Vicinity Map



# Natural Resource Stewardship Program

## 2016



### Project Funding

- Department of Ecology
- Clean Water Program

## Walker Creek

Skagit Watershed

Final Project Cost:

\$ 61,079.43

### Project Photo



## Project Description

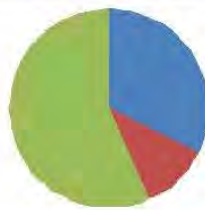
The property owner's at this project site were experiencing rapid erosion that could eventually threaten their well and driveway. The County agreed to complete bank stabilization on their property to reduce erosion rates while benefiting fish habitat. The Department of Ecology, through the NRSP program, funded replanting of the area and removal of the blackberries on the western portion of the property (not pictured). In total this project was 3.2 acres and included the installation of 1,140 native plants. Skagit Fisheries Enhancement Group completed invasive removal, site preparation, and planting. The Environmental Services Crew completed bank installation. This project was completed in fall of 2017 and maintenance will be on-going through 2020.

## Vicinity Map



# Natural Resource Stewardship Program

## 2017



**Project Funding**

- Ecology
- Clean Water Program
- Samish Indian Nation

## Samish River

### Samish Watershed

**Final Project Cost:** \$ 7,058.20

#### Project Photo



### Project Description

During the winter of 2016 a log jam developed across the Samish River at this location, causing extensive erosion and a large fir tree to fall. The County partnered with the Samish Indian Nation to restore bank stability by placing 3 pieces of LWD on the south side and installing coir lifts on both the north and south side of the Samish River. During site visits it became apparent that knotweed had infested the majority of the northern bank, owned by Puget Sound Energy, with some small patches on the southern bank. This project treated the knotweed and blackberries and replanted with native vegetation. In total 0.18 acres was planted with 330 native plants. The project was completed in September 2017 and will have maintenance through 2020.

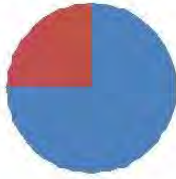
The Samish Indian Nation provided a crew to assist with planting which is not reflected in the total project cost.

### Vicinity Map



# Natural Resource Stewardship Program

## 2017



### Project Funding

- Ecology
- Clean Water Program

## Lorenzan Creek

### Skagit Watershed

Final Project Cost: \$ 44,414.90

### BEFORE PROJECT



### AFTER PROJECT



## Project Description

Skagit County worked to treat 7.5 acres of blackberry that was along Lorenzan Creek and in the understory. The County installed 3,565 native plants, many of them conifer in the understory, and treated the blackberry with the help of Skagit Fisheries Enhancement Group. The site was completed in October 2017 and will have on-going maintenance through 2020.

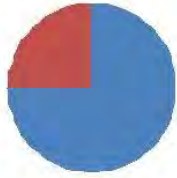
This project was able to be completed due to a partnership with the County's Drainage Utility (DU) program. The DU replaced an undersized culvert to reduce flooding and improve fish passage. This project could not have happened without that partnership, however the costs associated with the culvert project are not reflected in the total cost. Moving forward, DU will assist in providing funding for maintenance.

## Vicinity Map



# Natural Resource Stewardship Program

## 2015



### Project Funding

- Department of Ecology
- Clean Water Program

## Colony Creek

### Samish Watershed

Final Project Cost: \$ 23,639.22

**SITE PREP**



**AFTER**



## Project Description

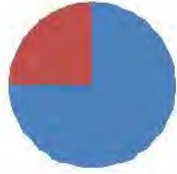
This project installed 800 feet of livestock exclusion fencing on Colony Creek to reduce cattle access to the creek for drinking water. The fence was 4-strand barbed wire, with the top wire smooth to aid in wild animal migration. 1.5 acres of blackberry and reed canary grass were treated and replanted with native vegetation at 8-feet on center. The above picture shows the process of placing protective tubing on the plants. Skagit Fisheries Enhancement Group completed fence installation, site preparation, and planting. Implementation was completed in 2016 with maintenance extending through 2018.

## Vicinity Map



# Natural Resource Stewardship Program

## 2016



**Project Funding**

- Department of Ecology
- Clean Water Program

## Tributary to Friday Creek Samish Watershed

**Final Project Cost:** \$ 9,896.25

**SITE PREP**



**AFTER**



### Project Description

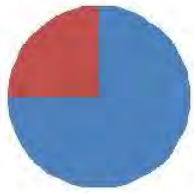
This project had small patches of knotweed and blackberry and a lot of reed canary grass along a wetland complex that is a tributary to Friday Creek. This project was 0.7 acres in total and installed 640 native plants. Skagit Fisheries Enhancement Group completed site preparation, invasive removal, and planting. The property owners wanted to participate and assisted with all of the planting and some of the maintenance. This volunteer labor is not reflected in the total project amount. Implementation was completed in 2016 with maintenance extending through 2019.

### Vicinity Map





# Natural Resource Stewardship Program 2017



**Project Funding**

- Ecology
- Clean Water Program

## Tributary to Silver Creek Samish Watershed

**Final Project Cost:** \$ 1,194.25

### Project Photos



### Project Description

This project site has a small stream that flows to Silver Creek which had no fencing in place to exclude the horse. The landowners installed the fence and the County planted native vegetation. The site was very small and required only 150 native plants. Maintenance at the site is considered complete, therefore no protective tubing was installed making the underplantings difficult to see in the salmonberry.

### Vicinity Map

