WASHINGTON STATE Recreation and Conservation Office

Final Report

Project #11-1297, Swan Lake Engineering Feasibility Assessment

Submitted by Susan Madsen on 12/30/2014 Accepted by Mike Ramsey on 12/30/2014

CONTACTS

Primary Sponsor: Skagit Fish Enhancement Group

Lead Entity: Island County LE

Managing Agency: Rec. and Conserv. Office

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RCO Grant Manager: Mike Ramsey
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DESCRIPTION OF THE COMPLETED PROJECT

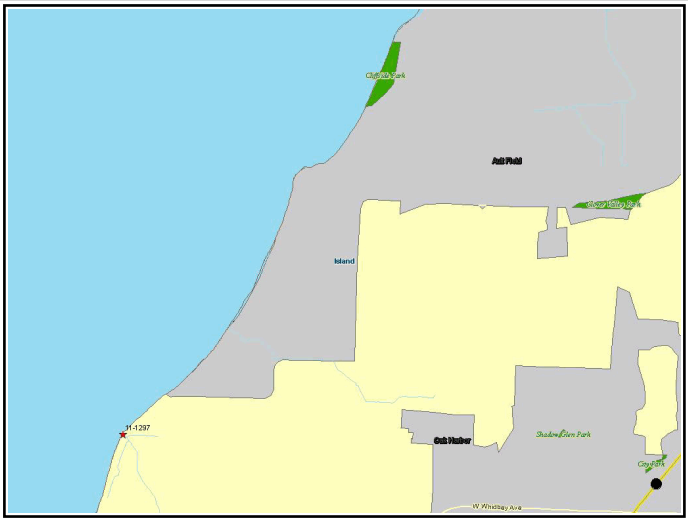
Project Start Date: 12/08/2011 **FundingEnd Date:** 06/30/2014 **RCO Closure Date:**

The overall objective of the Swan Lake Restoration Project was to improve the habitat quality and ecological function of Swan Lake. The Swantown Sub-basin is the sixth largest drainage in WRIA 6, covering about 18.0 sq km. It is located on the west side of north Whidbey Island west of Oak Harbor and south of Ault Field. The project is located in a coastal marsh currently not accessible to unimpeded tidal flushing or salmonid access, known as Swan Lake (or also “Swantown Lake”, “Swantown Marsh”, “Bos lake”, “West Beach Lake”). Swantown Creek flows into the coastal wetland therefore the project occurs in a pocket estuary.
A previous SRFB project (#09-1459) funded a preliminary feasibility study that focused on the historic character and function of Swan Lake. That work, completed in the fall of 2010, was considered the first step in the completion of a larger engineering feasibility assessment to identify potential restoration alternatives, and confirmed additional investigation was warrented. Work that was undertaken in support of completing the engineering feasibility assessment included topographic and bathymetric mapping, wave and littoral drift assessment, inlet analysis, infrastructure analysis for three possible options, and development of conceptual plans and preliminary cost estimate for the preferred alternative.

SITE LOCATION

General Area of Project: Whidbey Island

Waterbodies:



Cong District 2012:	02
County:	Island
HUC:	KITSAP
Leg District 2012:	10
Salmon Recov Reg 05:	Puget Sound
Section:	32
Township/Range:	T33NR01E
WAU:	WHIDBEY IS
WRIA:	Island

Sponsor Clarifications:

Sponsor verified the above information is correct and complete.

PROJECT NARRATIVE

The Swan Lake project kicked off in 2009 when the Swan Lake Watershed Preservation Group (SLWPG) contacted SFEG to inquire about partnering on a study to determine whether Swan Lake could be made accessible to juvenile salmonids. The hope was that the project would provide increased habitat for salmonid rearing on the west side of Whidbey Island, as well as improve the overall ecological function of the lake. SFEG hired Coastal Geologic Services to complete a preliminary review of the potential for restoring habitat in Swan Lake, and in 2011 obtained additonal funding to extend that assessment to include an evaluation of wave climate and littoral drift along the beach at a number of possible inlet sites, as well as to flesh-out a conceptual design and develop a preliminary cost estimate. Work on this project was accomplished by Jim Johannessen of Coastal Geologic Services, with assistance by technical specialists from ESA-PWA.

While our work showed that salmonid access to Swan Lake could be achieved over a substantial part of the tide cycle, unrestricted fish access could not be fully restored given the physical processes along the beach and concerns about flooding West Beach Road and adjacent farmland. Public feeling about the project was strong on both sides, and SFEG/SLWPG feel we successfully balanced concerns from area residents with our environmental goals. One major unanticipated concern that was recognized during the feasibility assessment was that the structure required to minimize velocity and maximize the amount of time inflows and outflows from the lake were not resticted by tidegates and/or submersion resulted in a major blockage along the beach. Such a structure is aesthetically unpleasing and resulted in increased erosion concerns along the beach. The structure would also have an extremely high cost, and thus the project sponsors ultimately agreed that such an expensive and highly engineered project was ultimately not the best approach for Swan Lake. We therefore will not be seeking additional funding from the SRFB for this project,

SFEG and SLWPG both benefitted from the support of Island County throughout this process, and are both hopeful that the county will in the future be able to undertake a smaller-scale project that improves lake water quality and habitat conditions. Both organizations will support and assist with such an approach as it is identified.

OVERALL PROJECT COSTS

Funding Formula:	**Requested**		**Original**		**Final**	
Puget Sound Acq. & Restoration:	$163,654.00	(85%)	$163,654.00	(85%)	$143,211.78	(85%)
Sponsor Match:	$29,000.00	(15%)	$29,000.00	(15%)	$25,377.58	(15%)
Total:	$192,654.00	(100%)	$192,654.00	(100%)	$168,589.36	(100%)

Paid To Date:	$143,211.78			**Last Released Billing:**	07/29/2014
Remaining RCO Funds:	$0.00			**Pending Billing:**	No
Advance Balance:	$0.00	**Match Bank:**	$9,184.49	**Number of Billings:**	8
Admin Limit:	$0.00	**Admin Spent:**	$0.00		
A&E Limit:	$0.00	**A&E Spent:**	$0.00		

Billed Cost Summary:	**Original Agreement**	**Expended**	**Non-Reimbursable**	**Total Billed**
Non-Capital				
Non-Capital Costs		$143,211.78	$34,562.07	$177,773.85
Equipment				
Non-Capital Total	$192,654.00	$143,211.78	$34,562.07	$177,773.85
Total	$192,654.00	$143,211.78	$34,562.07	$177,773.85

Project Cost Metrics:	Original Agreement	Final
PCSRF Federal Funds:		
State Funds:	$143,211.78	$143,211.78
Other Federal Funding:		
Pending Billing - RCO Share Approved:		
Retainage - RCO amount retained:		$0.00
Amount of other monetary funding:	$25,000.00	$0.00
Project identifier for the other monetary funding:	NA	N/A
Source of other monetary funding:	Island County Department of Public Works - $25,000	N/A
Value of Donated Unpaid Labor (Volunteers):	$1,500.00	$0.00
Source of Donated Un-paid labor contributions:	NA	N/A
Number of hours volunteers contributed to the project:		0
Describe how the value of the volunteers was determined:		N/A
Value of Donated Paid Labor:	$2,500.00	$34,562.00
Source of Donated Paid Contributions:		Island County Department of Public Works
Value of Other In-Kind Contributions:	$0.00	$0.00
Source of Other In-Kind Contributions:		N/A
Description of other In-Kind contributions:	Funds were used to subcontract with a consulting firm specializing in coastal geomorphology to begin collection of data that will be needed to complete the feasibility assessment.	N/A

PROJECT METRICS

	Original Agreement	Final
Completion Date		
Projected date of completion:	12/31/2013	06/30/2014
Project Goals		
Goals, purpose, and expected benefits:	The goal of this grant is to complete an engineering feasibility assessment to determine the best approaches for improving the habitat quality and ecological function of Swan Lake.	The goal of this grant was to complete an engineering feasibility assessment to determine the best approach for providing fish access and improving the habitat quality and ecological function of Swan Lake.

WORKSITE #1: Swan Lake

Worksite Description: The majority of the worksite is currently a brackish coastal embayment with uplands to the south. The land surrounding the lake is currently owned by Island County. Two private parcels north of the lake and south of West Beach Road are largely undeveloped. Lands north of West Beach Road are part of Joseph Whidbey state park. Swan Lake is the terminus of a complex +/- 3 mile wetland/stream system that drains a relatively large (for Whidbey Island) watershed. Water from the lake currently drains to the Strait of Juan de Fuca via a set of two tidegates that do not function properly under their current condition. The tidegates represent a complete barrier to fish passage. Winter storms in conjunction with high tides are known to wash over West Beach Road and strew driftwood on the road in the vicinity.

Driving Directions: From Mukilteo: Take ferry to Clinton, follow SR 525 (AKA SR 20 after Coupeville) for a total of 30.5 miles to Libbey Rd. Turn left on Libbey Road (go .5 miles), turn right on West Beach Rd, go 5 miles - Swantown Lake is on your right after descent down to sea level.

From Mt. Vernon: From I-5: Take Exit #230, follow SR 20 west to Whidbey Island. After Deception Pass drive for 7 miles. Turn right at traffic signal onto Ault Field Road, go past Naval Station Whidbey Island & the CPO Club (2 miles). Take the right leg of "Y" onto Clover Valley Rd, go 1.6 miles and turn right at stop sign onto Crosby Rd (name changes to N. West Beach Rd). Go 1.9 miles - Swantown Lake is on your left after you have passed Joseph Whidbey State Park on your right.

Coordinates for Worksite Directions - Latitude: 48.30 **Longitude:** -122.72

Sponsor Clarifications:

Sponsor verified the above information is correct and complete.

WORKSITE #1 COSTS

Worksite Billed Cost:	Estimated	Expended	Non-Reimbursable	Total Billed
Equipment				
Non-Capital Costs	$192,654.00	$143,211.78	$34,562.07	$177,773.85
Worksite Total	$192,654.00	$143,211.78	$34,562.07	$177,773.85

Worksite Costs by Category:	Original Agreement	Final
Planning/Coordination funding:	$192,654.00	$177,774.00

WORKSITE #1 METRICS

	Original Agreement	Final
Targeted salmonid ESU/DPS:	Chinook Salmon-Puget Sound ESU, Chum Salmon-Puget Sound/Strait of Georgia ESU, Coho Salmon-Puget Sound/Strait of Georgia ESU, Pink Salmon-Odd year ESU, Steelhead-Puget Sound DPS	Chinook Salmon-Puget Sound ESU, Chum Salmon-Puget Sound/Strait of Georgia ESU, Coho Salmon-Puget Sound/Strait of Georgia ESU, Pink Salmon-Odd year ESU, Steelhead-Puget Sound DPS
Targeted species (non-ESU species):	Searun Cutthroat	Searun Cutthroat
Area Encompassed (acres):	145.0	145.0
Miles of Stream Affected:		0.01

Restoration Planning And Coordination Project

Conducting habitat restoration scoping and feasibility studies

Description of the Plan:	The Swan lake Project was identified in the WRIA 6 Salmon Recovery Plan and is currently on the 3-year workplan. The proposed project involves completing an engineering feasibility assessment of the potential for restoring surface water connectivity (and access for anadromous salmonids) between wan Lake and the Strait of Juan de Fuca. Work to be completed in support of the projects includes: 1) topographic and bathymetric mapping; 2) wave and littoral drift assessment; 3) wetland functional assessment; 4) inlet analysis, 5) reference site analysis, and 6) infrastructure analysis. Based on the results of these technical assessment elements conceptual plans will be developed for one or more alternatives. Deliverables will include a technical memorandum describing the assessment results and three public meetings. The results of tasks completed in support of the technical assessment, and the outcomes of community meetings leading to the selection of a preferred alternative will be described in a final report. The final report will include, conceptual designs for the preferred alternative that are suitable for seeking funding to support project design (Phase 2).	The Swan lake Project was identified in the WRIA 6 Salmon Recovery Plan and is currently on the 3-year workplan. The proposed project involves completing an engineering feasibility assessment of the potential for restoring surface water connectivity (and access for anadromous salmonids) between wan Lake and the Strait of Juan de Fuca. Work completed in support of the project included: 1) topographic and bathymetric mapping; 2) wave and littoral drift assessment; 3) inlet analysis, 4) reference site analysis, and 5) infrastructure analysis. Based on the results of these technical assessment elements conceptual plans will be developed for one or more alternatives. Deliverables will include a technical memorandum describing the assessment results and three public meetings. The results of tasks completed in support of the technical assessment, and the outcomes of community meetings leading to the selection of a preferred alternative will be described in a final report. The final report will include, conceptual designs for the preferred alternative that are suitable for seeking funding to support project design (Phase 2).
Name of the Plan:	WRIA 6 Salmon Technical Advisory Group, 2005. Water Resource Inventory Area 6 multi-species salmon recovery plan, Board of Island County Commissioners, Coupeville, WA.	WRIA 6 Salmon Technical Advisory Group, 2005. Water Resource Inventory Area 6 multi-species salmon recovery plan, Board of Island County Commissioners, Coupeville, WA.
Total cost for Conducting habitat restoration scoping and feasibility studies:		

PROPERTY DESCRIPTION (Island County CFF)

Activity: Planning

Control & Tenure:

Instrument Type: Landowner Agreement

Timing: Existing

Term Length: Perpetuity **# yrs:**

Expiration Date:

Landowner Type: Local **Note:** Purchased with CFF Funds in 1999

Sponsor Clarifications:

Sponsor Clarifications:

SPONSOR CERTIFICATION

[X] I certify that this project has been completed in accordance with the project agreement.

[X] I certify that, to the best of my knowledge, the information in the Final Report is true and correct.

Submitted by Susan Madsen on 12/30/2014