SECURE RURAL SCHOOLS AND COMMUNITY SELF-DETERMINATION ACT OF 2000
PUBLIC LAW 110-343

TITLE II PROJECT SUBMISSION FORM
USDA FOREST SERVICE

Name of Resource Advisory Committee:
Project Number (Assigned by Designated Federal Official):
Funding Fiscal Year(s):

2. Project Name: Skokomish Estuary Restoration Phase 3C	**3a. State: Washington** **3b. County(s): Mason**
4. Project Submitted By: Rich Geiger, Mason Conservation District	**5. Date: 3/28/14**
6. Contact Phone Number: (360) 427-9436 ext 118	**7. Contact E-mail: rjgeiger@masoncd.org**

8. Project Location: Mouth of Skokomish River on Hood Canal	
a. National Forest(s): Olympic	b. Forest Service District: Hoodsport
c. Location (Township-Range-Section) T21N-R4W-Sections 1&2	

9. Project Goals and Objectives: The goal of this project is to restore critical estuarine habitat for spawning fish and juvenile fish rearing in the estuary while migrating out to Hood Canal. This will be done by restoring estuarine habitat and connection of freshwater streams to intertidal areas.

10. Project Description:

a. Brief: (*in one sentence*) Restore connections of intertidal streams to upstream freshwater and restore critical estuarine habitat at the mouth of the Skokomish River

b. Detailed: This proposal is for the continuation of the Skokomish estuary "portfolio" restoration project, referred to as Phase III. It is located within the exterior boundaries of the Skokomish Indian Reservation, near the Great Bend of Hood Canal in Mason County. This proposal addresses hydrologic continuity from a forested wetland complex by opening barriers to stream flow and anadromous salmonids. Expected benefits to varied life history behavioral requirements of varied salmonid species and stocks. ESA-listed salmonids in the area include Puget Sound Chinook, Hood Canal summer chum, coastal bull trout and coastal steelhead. Other species expected to benefit are coho and pink salmon as well as cutthroat. Grant funds will support construction of this project, anticipated for low-flow of summer 2014 if necessary, with subsequent site re-vegetation as needed.

11. Types of Lands Involved?

State/Private/Other lands involved? ☒ Yes ☐ No
Land Status:

If Yes, specify: Land is within the Skokomish Indian Reservation

12. How does the proposed project meet purposes of the Legislation? (Check at least 1)
☐ Improves maintenance of existing infrastructure.
☒ Implements stewardship objectives that enhance forest ecosystems.
☒ Restores and improves land health.
☐ Restores water quality

13. Project Type a. Check all that apply: (check at least 1)	
☐ Road Maintenance	☐ Trail Maintenance
☐ Road Decommission/Obliteration	☐ Trail Obliteration
☐ Other Infrastructure Maintenance (specify):	
☐ Soil Productivity Improvement	☐ Forest Health Improvement
☒ Watershed Restoration & Maintenance	☐ Wildlife Habitat Restoration
☒ Fish Habitat Restoration	☐ Control of Noxious Weeds
☐ Reestablish Native Species	☐ Fuels Management/Fire Prevention
☐ Implement CWPP Project	☐ Other Project Type (specify):
b. Primary Purpose (select only 1): Fish Habitat Restoration	

14. Identify What the Project Will Accomplish
Miles of road maintained:
Miles of road decommissioned/obliterated:
Number of structures maintained/improved: 17 new stream crossing structures
Acres of soil productivity improved:
Miles of stream/river restored/improved: 7.8 miles
Miles of fish habitat restored/improved: 7.8 miles
Acres of native species reestablished:
Miles of trail maintained:
Miles of trial obliterated:
Acres of forest health improved (including fuels reduction):
Acres of rangeland improved:
Acres of wildlife habitat restored/improved:
Acres of noxious weeds controlled:

Timber volume generated:
Jobs generated in full time equivalents (FTE) to nearest tenth. One FTE is 52 forty hour weeks: 0.92 FTE
People reached (for environmental education projects/fire prevention): Local Schools, ~ 500+ students
Direct economic activity benefit: Helps support $1,000,000 total project construction cost
Other:

15. Estimated Project Start Date: 7/15/14	**16. Estimated Project Completion Date:** 9/25/14

17. List known partnerships or collaborative opportunities. Project is a partnership between the Skokomish Tribe and Mason Conservation District with support from Tacoma Public Utilities

18. Identify benefits to communities. Restores critical fish habitat for ESA-listed fish species and also restores estuarine habitat for migrating birds common to the Olympic Forest. Provides jobs for project construction.

19. How does the project benefit federal lands/resources? This project will directly benefit Olympic Forest anadromous fish populations in critical spawning and out-migrating life phases and also improves habitat for migrating birds common to the Olympic Forest.

20. What is the Proposed Method(s) of Accomplishment? (check at least 1)	
☒ Contract	☐ Federal Workforce
☐ County Workforce	☐ Volunteers
☐ Grant	☐ Agreement
☐ Americorps	☐ YCC/CCC Crews
☐ Job Corps	☐ Stewardship Contract
☐ Merchantable Timber Pilot	☐ Other (specify):

21. Will the Project Generate Merchantable Materials? ☐ Yes ☒ No

22. Anticipated Project Costs
a. Title II Funds Requested: $50,000
b. Is this a multi-year funding request? ☐ Yes ☒ No

23. Identify Source(s) of Other Funding: USFWS National Coastal Wetlands Grant and Washington Salmon Recovery Funding Board Grant for construction and EPA Grant for project monitoring.

24. Monitoring Plan (provide as attachment)

a. Provide a plan that describes your process for tracking and explaining the effects of this project on your environmental and community goals outlined above.

b. Identify who will conduct the monitoring: Skokomish Tribe Natural Resources Department

c. Identify total funding needed to carry out specified monitoring tasks (Worksheet 1, Item k):

25. Identify remedies for failure to comply with the terms of the agreement.

If project cannot be completed under the terms of this agreement:

☒ Unused funds will be returned to the RAC account.

☐ Other, please explain:

Project Recommended By:	**Project Approved By:**
/s/ (INSERT Signature)	***/s/ (INSERT Signature)***
Chairperson	**Forest Supervisor**
Resource Advisory Committee	National Forest

Project Cost Analysis Worksheet

Worksheet 1

Please submit this worksheet with your proposal

Item	*Column A* **Fed. Agency Appropriated Contribution**	*Column B* **Requested Title II Contribution**	*Column C* **Other Contributions**	*Column D* **Total Available Funds**
a. Field Work & Site Surveys				
b. NEPA/CEQA				
c. ESA Consultation				
d. Permit Acquisition				
e. Project Design & Engineering			$50,000	$50,000
f. Contract/Grant Preparation				
g. Contract/Grant Administration			$20,000	$20,000
h. Contract/Grant Cost		$50,000	$1,305,000	$1,355,000
i. Salaries				
j. Materials & Supplies				
k. Monitoring			$165,000	$165,000
l. Other				
m. Project Sub-Total		$50,000	$1,540,000	$1,590,000
n. Indirect Costs			$5,000	$5,000
o. Total Cost Estimate		$50,000	$1,545,000	$1,595,000

NOTES:

a. Pre-NEPA Costs

g. Includes Contracting/Grant Officer Representative (COR) costs. Excludes Contracting/Grant Officer costs.

i. Cost of implementing project

l. Examples include overhead charges from other partners, vehicles, equipment rentals, travel, etc.

n. Contracting/Grant Officer costs, if needed, are included as part of Indirect Costs.

Other Contributions include:

USFWS National Coastal Wetlands Grant	$1,380,000 – Approved
Washington Salmon Recovery Funding Board Grant	$400,000 – Pending
EPA Grant	$165,000

Attachment E: MONITORING PLAN

PHASE THREE OF THE SKOKOMISH RIVER DELTA ESTUARY

ESTUARY HABITAT RESTORATION PROGRAM (EHRP)

SKOKOMISH TRIBE INDIAN RESERVATION, MASON COUNTY, WASHINGTON

January 23, 2013

1. Location

Phase Three of the Skokomish River Delta Estuary Restoration project is located near Shelton, Washington in Mason County, in the vicinity of the mouth of the Skokomish River at the Great Bend of Hood Canal. The affected area of this project encompasses the entire Skokomish estuary, which is bound on the east by Highway 106 and on the west by Highway 101. For the purpose of this restoration proposal, the downstream limit of the project site is the leading edge of the existing delta cone, which correlates to the extent that sediments from the Skokomish River and Wilson Slough are deposited. The project site extends upstream to the extent of tidal influence, which is anecdotally identified at River Mile 5, near the Skokomish River Bridge on Washington State Highway 101. A large coastal forested freshwater wetland complex and several other small freshwater streams that flow into the Skokomish Estuary and Wilson Slough are also included within the project area.

2. Phase Three - Project Description

The primary goal of the Skokomish Estuary Restoration Phase Three project is to restore the function of historic hydrology within the project area, with an emphasis on creating brackish water conditions by connecting upland freshwater inputs to the tidal prism of Hood Canal. Restoration efforts will involve restoring freshwater inputs to historic channel locations and removing existing structures that limit/degrade the connection of these channels to the tidal prism. A total of thirteen (13) existing culverts and tidegates will be removed in order to allow the restored channels unrestricted connection to the tidal prism of Hood Canal. These twelve sites are located on remnant road grades that will be abandoned. Two existing road grades will be maintained in order to provide access for maintenance and repairs associated with the power transmission lines that run through the restoration site. There is a single undersized culvert on one of these roads that will be replaced with a structure that will meet fish passage requirements and help to restore the function of severely degraded sediment and nutrient transport regimes. Numerous channels were truncated (disconnected) during the original construction of these two road grades by filling the historic channel and directing the flows elsewhere. To restore the historic channel connections at these sites, thirteen (13) culverts and three (3) bridges will be installed to support the re-establishement of natural processes, such as sediment and nutrient transport, as well as allowing unrestricted access to all aquatic species at any life stage.

Channels that have been diverted into man-made ditches will be rehabilitated to historic locations by excavating new channels at two sites and enhancing the channel geometry of historic channels that have been severely degraded. Channel enhancement will involve

strategic placement of fill material and large woody debris to provide habitat complexity and channel form that were lost during excavation of borrow material. Finally, twelve (12) new breach locations will be installed within the remnant dike footprint at the historic outlets of tidal channels that drained the interior of the project area. These breach locations will accelerate the formation of tidal channels within the restoration site by providing drainage outlets that correspond to historic channel locations and associated drainage cells.

The construction activities proposed in the Skokomish Estuary Restoration Phase are summarized below:

- Removing thirteen (13) existing culverts and tide gates on roads that are scheduled for abandonment.
- Upgrading a single existing undersized culvert to a size that will restore fish passage and accommodate the function of natural processes, such as sediment and nutrient transport.
- Installing thirteen (13) new culverts and three (3) new bridges at locations were existing roads have completely truncated (disconnected) historic channels.
- Excavating two channels at historic locations and enhancing the channel geometry of existing waterways that were degraded during excavation of borrow material.
- Installing twelve (12) breaches in the remnant dike footprint to accelerate the formation of tidal channels within historic drainage cells.

3. Project Goals and Objectives

The goal of the Skokomish Estuary Restoration Phase 3 project is to restore the function of historic hydrology within the project site. The objectives that will lead to the realization of this goal are; 1.) re-establishing tidal channels and drainage cells at historically accurate locations, 2.) restoration of historic freshwater inputs to these tidal channels and 3.) removal of barriers that currently restrict historic freshwater inputs, fish passage and tidal prism connection.

4. Monitoring Goals

Restoration monitoring is critical in evaluating; 1) the successful implementation of the restoration project, 2) if project goals are being met, and 3) if adaptive management corrections are necessary. Monitoring will begin prior to construction to provide baseline conditions within the restoration area. The monitoring activities will continue through construction for an additional five (5) years upon completion.

5. Monitoring Plan Elements

Monitoring elements for Phase Three will be driven by physical changes (development of slough, distributary and dendritic channels) occurring in response to the elimination of freshwater barriers and introduction of natural tidal fluctuations. Additional monitoring of water quality (salinity and temperature) and tidal regimes (water surface elevation) are established with continuous data-loggers, prior to construction and will be retained for a minimum of five (5) years for trend analysis. Data-logger information will be transferred (downloaded) monthly.

6. Monitoring Strategies:

Datasets for both structural and functional parameters will be monitored for restoration response. Monitored elements are directly associated with formation and maintenance of channels within the site (structural) and water chemistry typical of healthy estuarine habitats (functional). A description of the structural and functional monitoring parameters follows below.

Structural

1. **Slough, Distributary and Dendritic Channel Formation (acreage, width, length, location, elevation, depth, sinuosity).**
   Dataset collection includes A.) cross-section surveys at channel mouths to track changes in channel geometry, B.) GIS analysis of ortho-rectified aerial photography to track development of restored channels within the project area and C.) detailed as-built drawings of installed structures (culverts and bridges).

   A.) The cross section data will be used to evaluate effectiveness of the channel connections of the restored channels and track development of tidal channel geometry. The cross section data will be collected annually at low tide during the low flow season of the Skokomish River, between July and September.

   Success Criteria: The thalweg elevations at the channel mouths maintain the installed elevation or scour to a lower elevation. Adaptive management may be required if the thalweg elevations are not naturally maintained and the channels connections become degraded.

   B.) GIS data sets describing the development of dendritic and tidal channels will be created by analysis of ortho-rectified aerial photography. The length and locations of restored channels will be compared to historic lengths and locations.

   Success Criteria: It is the project team's expectation that channel lengths and locations will trend towards the historic conditions present in 1938. Adaptive management actions will be taken if the channel lengths and locations do not trend towards 1938 conditions.

   C.) Detailed as built surveys of all installed culverts and bridges will provide a means to ensure that the structures have been installed as designed. The proposed designs have been vetted by both the USFWS and the WDFW and have been determined to meet objectives of providing adequate fish passage as well as restoring historic hydrologic connections.

   Success Criteria: Proper installation of designed culverts and bridges will determine if these sites have been restored successfully. The detailed as-built surveys will verify that the structure is properly sited and installed correctly. Any

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structures that are not installed correctly will trigger adaptive management to address the problem immediately.

2. **Visual Documentation (Photo Point Monitoring).** Current and ongoing photographic documentation along select viewpoints and within sample points associated with other biological monitoring occurring throughout the delta.

   Success Criteria: Changes in habitat structure (plant communities, tidal inundation, biotic communities) will be observed and recorded using digital photography.

Functional

3. **Functional Distribution of Estuarine Mixing.**
   A series of continuous water monitoring probes will be deployed within an enhanced channel and measurements will be recorded at a minimum of one hour intervals. The probes will be deployed at three locations within the enhanced channel; one probe at the mouth of the restored stream, one probe in the saltmarsh flats and the final probe at the forested wetland/saltmarsh interface (see monitoring plan map for probe deployment locations). Parameters measured will include salinity, temperature and water surface elevation.

   Success Criteria: The successfully completed restoration will exhibit two distinct characteristics that can be detected by the proposed monitoring probes: estuarine mixing and water surface elevation changes. Measured salinity is expected to be highest near the mouths of the restored channels and lowest at the upstream extents of the channels that are fed by freshwater sources. The salinity gradient will demonstrate mixing of salt and freshwater, resulting in an increase in brackish water conditions within the restoration site. Water surface elevation measurements at these locations will demonstrate connectivity to the tidal prism that is currently lacking at the site. The monitoring team will take advantage of an existing ambient pressure sensor maintained by the Skokomish Tribe to account for fluctuations in atmospheric pressure that will occur.

7. Adaptive Management:

Adaptive management will be required if the success criteria for any given parameter is not met. The monitoring will continue for a period of five years after construction has been completed and will help evaluate effectiveness of the completed restoration. Specific adaptive management proscriptions will be developed as required, ensuring that the additional treatments are both site specific and effective.

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8. Monitoring Schedule

Skokomish Estuary Restoration Monitoring Schedule – Annual Calendar, 2012 - 2018

	Cross-Section Surveys	Aerial Photography Analysis	Photo Point Monitoring	Water Quality Probe Data Retrieval
February			X	X
March				X
April			X	X
May				X
June			X	X
July				X
August	X	X	X	X
September				X
October			X	X
November				X
December			X	X
January				X

X: All monitoring activities will be conducted for a period of five years after completion of construction. Photo point monitoring will be coincident with water quality probe data retrieval every other month.

9. Monitoring Reports

Monitoring summaries will be completed each year in the form of a Technical Memorandum. This Memorandum will describe the results of the current monitoring activities and detail any required changes or deviations from the proposed monitoring plan. The Memorandum will include graphs depicting the measured water quality variables, reduced survey information related to structural evaluation of restored channels and photos documenting the progress of restoration at the monitoring sites. A cumulative report detailing the elements of the conditions, measured changes, and overall trends observed at the restoration site will be compiled at year five and distributed to all project stakeholders.

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References

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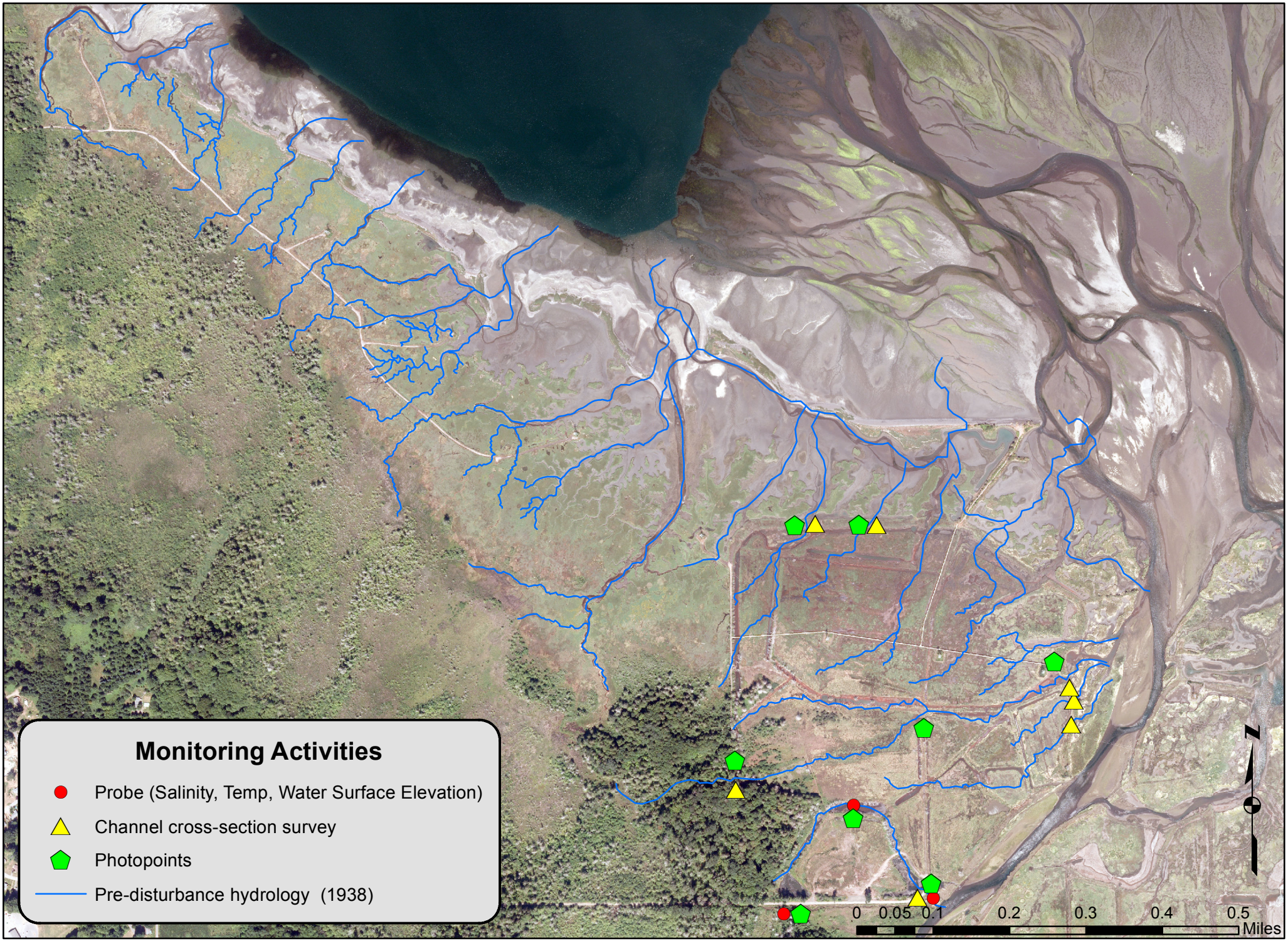
Skokomish Estuary Restoration Phase 3, Effectiveness Monitoring Location Map



Skokomish Estuary Restoration, Phase 3C

Map By: G. Glore, Mason CD, 1/2014