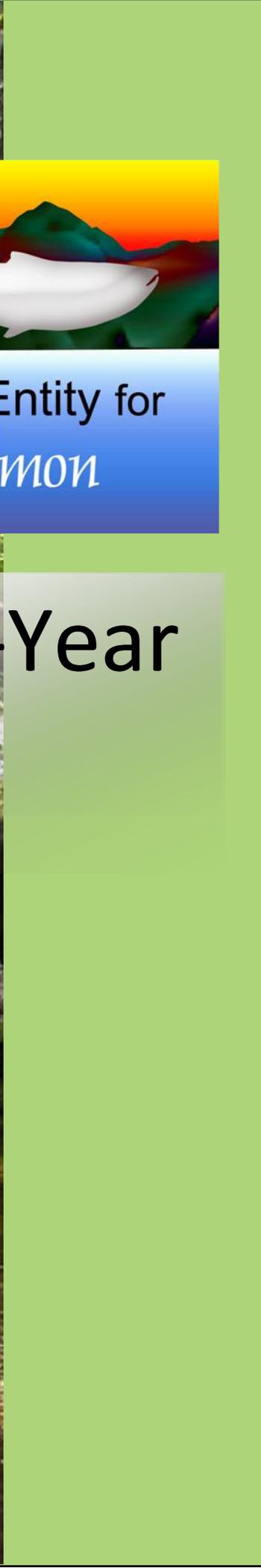


# 2013 Three-Year Work Plan



**Table of Contents**

**Introduction**..... 3

**Membership** ..... 4

**Narrative Report**..... 6

**List of Ranked Work Plan Narratives 2013** ..... 13

**2013 3-Year Work Plan Matrix**..... 20

**Work Book for Ranking Work Plan Narratives** ..... 52

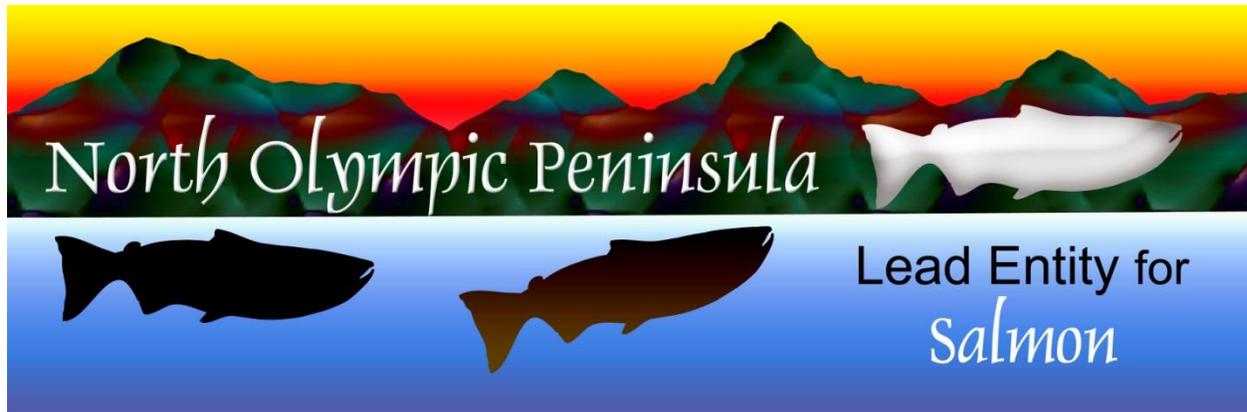
    Capital Scoring Criteria..... 56

    Non-Capital Scoring Criteria..... 58

**Review of NOPLE 2013 Work Plan Narrative Scoring** ..... 75

**Project Narratives**..... 77

**2013 3-Year Work Plan Review**..... 126



**WHAT THIS IS:** This document is our 2013 Three-Year Work Plan. Our work plan is a roadmap which guides our salmon recovery efforts across the North Olympic Peninsula in Washington State. This plan is a way of managing the implementation of both capital and non-capital projects, activities and programs needed to implement the recovery of both listed and non-listed salmon species in our numerous watersheds from Blyn on Clallam County’s east side, across the Strait of Juan de Fuca to Cape Flattery, our consortium’s most northwest boundary in Neah Bay.

This report is required by the Puget Sound Partnership, which is our regional salmon recovery organization. Recovery of listed Chinook is one of the Partnership’s significant mandates, so it tends to report more heavily on efforts to restore Puget Sound Chinook, including both Elwha and Dungeness Chinook which are found in our area. Efforts to delist Eastern Strait of Juan de Fuca Summer Chum, which also inhabit our area; is under the purview of the Hood Canal Coordinating Council; which is the Regional Recovery Organization for summer chum.

Our organization members met in November of 2013 to review and offer possible additions, deletions and revisions to our work plan process. Only minor revisions were made to our overall salmon recovery strategy, while there were a few changes to project criteria added to the overall scoring process. Those changes are noted herein.

Our policy is to do a major work plan revision every three years, so this existing work plan process, would be used in 2014, 2015 and 2016, with another major review needed prior to 2017. In those years in which a major review is not needed, we will still issue a call for major updates to existing work plan projects, as well as adding new projects to be considered and those projects will be scored or rescored. There will be scoring of all projects on the work plan only once every three years.

**WHO WE ARE:** We are a consortium of area governments and tribes, as well as non-profit organizations and citizens involved in salmon recovery efforts. Member governments include: the Makah, Lower Elwha Klallam and Jamestown S’Klallam Tribes, Clallam County including unincorporated areas such as Neah Bay, Clallam-Bay Sekiu and Joyce, as well as the cities of Port Angeles and Sequim.

**2013 Lead Entity Group Membership (Citizen & Policy Team)**

**Andy Brastad**, Clallam County, Environmental Health Director  
**Scott Chitwood**, Jamestown S’Klallam Tribe, Natural Resources Director  
**Larry Ward**, Lower Elwha S’Klallam Tribe, Hatchery Manager  
**Scott Johns**, City of Port Angeles, Associate Planner  
**Steve Rankin**, Citizen & Sequim Area Resident  
**Stephanie Martin**, Makah Tribe, Habitat Division Manager/ Ecologist  
**Tom Riepe**, Citizen & WRIA 18 West Area Resident  
**Philip DeCillis**, Citizen & WRIA 19 Area Resident  
Sequim City Government Seat, currently vacant

**2013 Technical Review Group Membership**

**Rebecca Benjamin**, North Olympic Salmon Coalition, Executive Director  
**Michael Blanton**, Puget Sound Partnership,  
**Chris Byrnes**, WDFW Watershed Steward  
**Coleman Byrnes**, Citizen Salmon Advocate  
**John Cambalik**, Straits Ecosystem Recovery Network, Consultant  
**Kimberly Clark**, Makah Tribe, Watershed Scientist  
**Patrick Crain**, Olympic National Park, Biologist  
**Michele Canale**, North Olympic Land Trust  
**Duane Fagergren**, Puget Sound Partnership  
**Ken Hobson**, Citizen Salmon Advocate  
**Joe Holtrop**, Clallam Conservation District, District Manager  
**Randy Johnson**, Jamestown S’Klallam Tribe, Member at Large  
**Cathy Lear**, Clallam County Dept. of Community Development, Senior Biologist  
**Raymond Moses**, Lower Elwha Klallam Tribe; Project Biologist  
**Tracey Martin**, Citizen Salmon Advocate & Streamkeepers of Clallam County  
**Mike McHenry**, Lower Elwha Klallam Tribe; Habitat Restoration Manager (Alt)

### **Lead Entity Staff**

**Cheryl Baumann**, Coordinator  
**Eric Carlsen**, Restoration Planner  
**Lara Lampert**, HWS & Lead Entity Support

### **Technical Support**

**Kristina L. Mayer**, Ed. D. KLMayer Consulting Group Inc.  
**Walter Pearson**, Ph.D, Peapod Research

This report is a result of the collaborative work of the North Olympic Lead Entity for Salmon, its members, stakeholders, consultant and staff. It builds on work created by Walter Pearson, Ph.d of Peapod Research and Sam Gibboney of ISE Consultants.

For more information on this document or salmon recovery involving the North Olympic Peninsula Lead Entity for Salmon, please contact Coordinator Cheryl Baumann at [cbaumann@co.clallam.wa.us](mailto:cbaumann@co.clallam.wa.us) or by calling 360-417-2326.

For additional information on local salmon recovery efforts go to the Habitat Work Schedule online at <http://hws.ekosystem.us/> click on 'Lead Entities', and then 'North Olympic Peninsula LE for Salmon'

For restoration projects you can visit on the North Olympic Peninsula and elsewhere in Puget Sound go to: <http://salmontrails.org/watershed/north-olympic/>

North Olympic Peninsula Lead Entity for Salmon  
2013 Three-Year Work Plan  
**Narrative Report**

This is the 2013 Report of Recovery Plan Implementation detailing major work funded, started & completed within the past year since the 2012 Report.

## Introduction & Context

- 1. Provide a brief overview of the characteristics of your Chinook Salmon Recovery area. Refer to the checklists and other content developed for the 2012 Salmon Recovery Council Conference and work with your PSP liaison to summarize this information.***

While there are many different organizations in Clallam County working on salmon restoration, the North Olympic Peninsula Lead Entity for Salmon is unique in its big picture approach. The lead entity is the umbrella organization that brings representatives from various stakeholder groups together to coordinate and assist with salmon and ecosystem recovery efforts across the North Olympic Peninsula.

Active Members of the North Olympic Lead Entity for Salmon include citizens and representatives of the Jamestown S’Klallam, Elwha Klallam and Makah Tribes, Clallam County, the City of Port Angeles, Clallam Conservation District, Clallam Marine Resources Committee, North Olympic Salmon Coalition, North Olympic Land Trust, the Washington Department of Fish and Wildlife, and the Puget Sound Partnership.

The North Olympic Peninsula is home to numerous freshwater rivers and extensive marine shorelines. Loss and degradation of habitat needed to support healthy salmon populations and functioning ecosystems has resulted in dwindling, threatened and endangered salmon populations.

Our goals are to achieve robust, self-sustaining fish stocks capable of supporting harvest, implement salmon recovery plans to protect and restore fish habitat, restore and maintain ecosystem functions, instill ecosystem awareness, and integrate these

In terms of our formal Puget Sound Chinook recovery area, it includes working towards restoring habitat and recovery of Dungeness Chinook in the Dungeness River (WRIA 18 East) located in the County’s east end, as well as Elwha Chinook from the Elwha River(WRIA 18 West) located just west of Port Angeles. We have recovery chapters in the Puget Sound Chinook Recovery Plan for both Dungeness and Elwha. In addition, we also work to restore habitat and help recover Chinook located along the Strait of Juan de Fuca, (WRIAs 18 & 19) which is an important nearshore salmon migration corridor.

In terms of watershed characteristics, the Dungeness River and its main tributary, the Gray Wolf; is a large watershed draining 270 square miles. It has a 172,000 acre watershed area with over 546 miles

of streams and tributaries. The river drains into the Dungeness Bay and the Strait of Juan de Fuca. The watershed, located in a rainshadow, is the only one in the coastal Northwest where an irrigation system which removes water from the Dungeness is necessary for agriculture. The Dungeness supports an early run of Dungeness River spring/summer Chinook, along with Hood Canal/Strait of Juan de Fuca summer chum, winter and summer steelhead, upper and lower pink salmon, cutthroat trout and bull trout.

The Elwha River is one of the largest and historically the most productive river along the Strait of Juan de Fuca. The Elwha watershed hosts all species of salmon including Elwha River spring, summer and fall Chinook as well as coho, pink, winter and summer steelhead, summer chum, cutthroat trout and bull trout.

The Elwha River watershed encompasses 321 square miles, the majority of which are within Olympic National Park. The mainstem river is about 45 miles in length with over 100 miles of tributary streams. The Elwha is currently undergoing the largest restoration effort in North America with the removal of two hydroelectric dams blocking access to 80 miles of prime spawning habitat in the upper watershed. The Elwha supported legendary runs of salmon until the dams were constructed in the early part of the 20<sup>th</sup> century. The dams were constructed without fish passage facilities, even though state law required such at the time.

**2. Describe the process for developing your 3-Year Work Plan narrative and project/activity list. Who are the stakeholders involved and what are their roles? Are harvest and hatchery managers involved in your planning group or have they had an opportunity to comment or consult on your 3-Year Work Plan?**

A draft of our Three-Year Work Plan narrative is prepared by staff, in consultation with stakeholders. It is then vetted by members of the North Olympic Peninsula Lead Entity for Salmon's Technical Review Group as well as being reviewed and approved by the Lead Entity (Citizens) Group. Both groups involve participation by citizens, local jurisdictions and tribal representatives, non-profit organizations and WDFW.

The lead entity has a tribal hatchery manager and a tribal natural resources director involved in harvest decisions who are very involved members of our lead entity throughout the year, as well as WDFW watershed stewards. All three area tribes- Jamestown S'Klallam, Elwha Klallam and Makah regularly participate in both our technical and policy (citizens) teams. We have tried to get more harvest and hatchery representatives regularly involved in our process, as well as providing input into our three-year work plan. However, there does not seem to be any interest in doing so nor any understanding of possible benefits to them as a result of such. Some participating stakeholders have tried to encourage this involvement as well.

We have also made several overtures to WDFW at the state level for assistance with this important attempt to have some communication and integration amongst what is known as the 4 H's of salmon recovery- habitat, hydro, hatchery and harvest. Unfortunately, we do not see this integration happening unless high level department leaders at WDFW instruct hatchery and harvest staff to participate. We would certainly welcome their participation.

Having that coordination and regular communication would go a long ways in helping advance a more effective and integrated recovery and restoration effort. As one of our counterparts from another watershed said at a recent meeting, this issue truly is the elephant in the salmon recovery living room. Many of our partners appear to have given up trying to help make this happen because it is like knocking on a door that will not open.

In terms of updating our three-year work plan project list, project sponsors, stakeholders, non-profits, technical and citizens committee members and others are notified in the fall that we are accepting new and updated project proposals for our three-year work plan project matrix. Project sponsors are given specific guidelines of how to submit project proposals which include a narrative, project matrix and photos. Those project concepts are then compiled and provided to technical team members who review and score them. A spreadsheet is prepared, which shows how the various projects ranked. This is done in a blind fashion, so it is unknown what project landed where on the chart. After review and discussion, the technical team makes a recommendation to the Lead Entity Group of where the line should be drawn which distinguishes what projects are eligible to apply for current grant round funding and what high priority projects the LEG would most like to see project submittals from (top twenty) See attached 2013 work plan scoring with ranked scores on page 13.

## Background, Planning and Logic of the Recovery Chapter

### **1. *What are the recovery goals for your watershed for Chinook salmon? Include information on both population goals (VSP parameters) and habitat goals.***

#### Dungeness Habitat & Recovery Goals:

- Restoration of the lower river floodplain and delta to increase the quantity of essential rearing and salt/freshwater transition habitat. Includes floodplain restoration/constriction abatement (RM 2.6 -11.3) to alleviate channel constrictions, thereby increasing corresponding channel meanders & reducing gradient, velocities, scour and bank erosion
- Protection of existing functional habitat within the watershed
- Water Conservation, Instream Flows & Water Quality Improvement/Protection to improve summer low flows & alleviate water quality concerns

- Restoration of Functional Riparian & Riverine Habitat to improve the quality of riparian habitat and function, including temperature moderation, long-term recruitment of Large Woody Debris (LWD), cover, food production, etc.
- Large Woody Debris Placement
- Nearshore Habitat Protection & Restoration to improve the quantity & quality of estuarine & nearshore habitat
- Barrier Removal to address passage conditions
- Stock Recovery/Rehabilitation Hatchery Reform
- Sediment Management/Source Control
- Harvest: Currently there is no fishery for Chinook in the Dungeness River or Dungeness Bay. The timing of coho Chinook adults during the fall. The recreational trout fishery is timed to reduce migrants.
- Hatchery: The Dungeness River Management Team hypothesizes that habitat recovery will be sufficient to support--- hatchery management strategies are designed to be consistent with recovery --- is being utilized to bolster Chinook production in the watershed. The program – accommodate a robust, naturally-sustainable Chinook population. Non-Chinook managed to avoid negative impacts of predation on Chinook.

#### Dungeness Chinook Recovery Goals:

Abundance and productivity targets for threatened Chinook salmon populations in Puget Sound have been developed by Federal, State and tribal fisheries biologists and endorsed by the Dungeness River Management Team. Planning targets are based on the four viable salmon population characteristics: abundance, productivity, diversity and spatial structure. The Ecosystem Diagnosis and Treatment (EDT) method (Moberg Biometrics, Inc., 1999) was used to model the parameters for recovery of Puget Sound Chinook populations. This EDT analysis provided “recovery goals” utilizing Properly Functioning Conditions Plus (PFC-Plus), as well as an evaluation of the ability of individual actions and suites of actions to move the population towards the recovery goals over time. In this case, PFC-Plus assumes PFC in the freshwater habitat (NMFS, 1996), and pristine conditions in the estuary. Therefore, the “recovery goals” established through the EDT model likely exceed the productivity and abundance actually possible. However, the PFC-Plus standard was chosen by the planning participants to ensure that the estuary was incorporated into the goals. At the time that the goals were set, there were no guidelines established for PFC in the estuary.

The following Chinook abundance planning targets and productivities were developed for the Dungeness watershed based on results generated by EDT.

**Dungeness Chinook Escapement Planning Targets in Comparison with Mean Escapement over the Last Fifteen Years:**

Escapement Planning Targets Mean with Productivity in Parentheses	Mean Escapement (1987 - 2001): 123
4,700 (1.0*)	1,200 (3.0*)

*\*Note: Productivity is expressed as adults produced per spawner.*

The planning targets indicate a range of escapement and the associated productivities (or adult returns per spawner) that would constitute recovery. The range is needed to show that abundance and productivity are related, and even under recovery conditions, will tend to vary inversely (the productivity declines when the abundance increases and vice versa). Thus, the range of related target escapements and productivities shown represents the recovery goals. The EDT analysis not only provides an estimate for the abundance and productivity targets, but also diversity and time to achieve recovery. The EDT model incorporates “life-history pathways” into its assessment of diversity. These pathways include not only differences in timing, but also differences in migrational behavior as a smolt emigrates from a system. Time to achieve recovery is obtained through simulated environments, with an outlook for 25 and 100 years. The following two tables summarize the output of the EDT exercise. The “High”, “Medium”, and “Low” scenarios are the suites of projects found in the response to Question A.

Elwha Habitat & Recovery Goals

- Restore Access to the Upper Watershed
- Protect Existing Functional Habitat
- Restore the Floodplain & Restore Natural Processes
- Protect/Restore Estuary & Nearshore Environments
- Conserve Water & Protect Instream Flow
- Placement of Large Woody Debris to restore Function
- Take steps to ensure harvest rate for Elwha Chinook is consistent with recovery goals
- Maintain Elwha Chinook populations via hatchery prior to & during dam removal
- Maintain the integrity of the Elwha Chinook gene pool
- Restore Chinook to the Upper Elwha Watershed following dam removal

Elwha Chinook Recovery Goals:

**Elwha Chinook Escapement Planning Targets:**

Escapement Planning Targets with Productivity in Parentheses (pg. 26 Elwha Recovery Efforts)

17,000 (1.0\*)                      6,900 (4.6\*)

*\*Note: Productivity is expressed as adults produced per spawner.*

Elwha Chinook Recovery Goals: VSP

Total Spawning Escapement = 17,493 Chinook Spawners  
(pg 92, Elwha Fish Recovery Plan EFRFP)

**2. What is the current strategy to accomplish the recovery goals and what assumption(s) is this strategy based on?**

The current strategy is to tackle two of the largest goals in each of the recovery chapters including removal of both dams blocking access to the upper Elwha watershed and advancing Dungeness dike setback in the lower Dungeness. There are also other recovery strategies underway, including the building of more than 30 massive engineered log jams in the lower Elwha to improve habitat conditions in the newly freed Elwha and the large effort to revegetate newly exposed Elwha floodplain.

**3. What new knowledge or information has changed your strategy, assumptions or hypotheses since your recovery chapter was written?**

There was a study which surveyed juvenile fish use of the nearshore of the Central Strait of Juan de Fuca. It showed that ESA-listed stocks of Puget Sound and Columbia River stocks of Chinook were documented using the western Strait, including shorelines of Pysht, Crescent Bay and Freshwater Bay.

**4. How is the sequencing and timing of actions or projects done in such a way as to implement the strategy as effectively as possible?**

The lead entity and restoration practitioners are mindful of the need to proceed in a way that makes sense when it comes to sequencing restoration efforts and implementing recovery strategies. They speak to this issue in their work plan project concepts, it can come into play when projects are scored and technical team and citizen committee members also raise questions about sequencing issues.

Plan & Gaps

**1. *What are the obstacles or barriers for implementing monitoring and adaptive management? Where could you use support for development of your M&AM plans?***

In terms of barriers, lack of funding for monitoring and adaptive management is a key issue. So is the fact that monitoring and adaptive management are seen as “other” instead of being viewed as an important and critically-needed component of restoration.

We are beginning our work with the Puget Sound Partnership (PSP), our Regional Implementation Technical Team (RITT) member and our lead entity team and local partners to develop Monitoring and Adaptive Management Plans. Once that work is done, funding will be needed to implement the plans. PSP; with our support; appears to be uniquely situated to help seek funding for the 15 Puget Sound watersheds needing such.

**2. *Considering all actions affecting salmon recovery in the watershed, is the Chinook salmon resource likely to be closer to, or further from, the recovery goals ten years from now as it is today?***

With the removal of the lower dam on the Elwha and two thirds of the upper dam gone, construction of engineered log jams to maximize Elwha recovery and with significant acquisitions and removal of infrastructure from the Dungeness floodplain completed and design alternatives underway, and progress improving stream flows in the Dungeness, our lead entity believes we are closer to meeting recovery goals for both the Elwha and Dungeness Chapters of the Chinook Recovery Plan.

With a significant increase in Puget Sound Restoration & Acquisition funding from the 2013 Washington Legislature as well as funding for Coordinated, Integrated Floodplains which includes a significant amount of money for Dungeness Recovery efforts; we are optimistic about moving much closer towards identified recovery trajectories.

<b>List of Ranked Work Plan Narratives</b>					Date:	
<b>2013</b>					14-Jan-13	
<b>Ranking of Work Plan Narratives 2013</b>			Category is either Capital or NON-Capital			
<b>New or updated projects are highlighted in yellow</b>						
Rank	Title	Project ID	Sponsor	Category	Weighted Mean Score	Normalized Score
1	Three Crabs Nearshore and Estuarine Restoration	13104	NOSC	Capital	129.63	0.786
2	Little River LWD	13102	LEKT	Capital	121.61	0.738
3	Elwha Revegetation Project	11087	LEKT/ONP	Capital	119.86	0.727
4	Dungeness River Floodplain Restoration (replaces project 35 and 36 Corps dike setback)	09092	JS'KT/CC/Army Corps	Capital	119.78	0.727
5	Dungeness Drift Cell Conservation	09032.1	JS'KT	Capital	118.76	0.720
6	Elwha ELJ Project	09016.1	LEKT	Capital	118.63	0.720
7	WA Harbor Restoration	09047.1	JS'KT	Capital	118.16	0.717
8	Lyre River Estuary Protection and Restoration	10080.1	NOLT	Capital	116.38	0.706
9	North Sequim Bay Drift Cell Conservation Project	09093	JS'KT	Capital	116.26	0.705
10	Dungeness Riparian Habitat Protection	09030.1	JS'KT, WDFW, NOLT	Capital	112.32	0.681
11	Pysht River Salt Marsh Estuary Restoration	09009.1	LEKT/Merril and Ring/Cascade Conservancy	Capital	111.73	0.678

# NOPLE for Salmon: 3-Year Work Plan | 2013

Rank	Title	Project ID	Sponsor	Category	Weighted Mean Score	Normalized Score
12	Ediz Hook Beach Restoration Phase 3	13103	LEKT, WDNR, COPA	Capital	110.69	0.671
13	Dungeness River Large Wood Restoration	09029.1	JS'KT/CC	Capital	110.61	0.671
14	Salt Creek Salt Marsh Reconnection	09014	CCD, NOSC & LEKT	Capital	109.84	0.666
15	Dungeness River Riparian Restoration	09031.1	JS'KT	Capital	108.62	0.659
16	Dungeness River Instream Flow Restoration - Storage	12098	CCD, WUA, CC, WWT	Capital	107.79	0.654
17	Elwha Watershed Adaptive Management Plan & Monitoring	09057.1	LEKT/NOAA/USGS/USFWS/WDFW	Non-Capital	88.07	0.653
18	Dungeness River - Meadowbrook Creek Restoration	09041.1	JS'KT, Dungeness Farms, Clallam Conservation District, Washington Department of Fish and Wildlife	Capital	107.55	0.652
19	Pysht Floodplain Acquisition and Restoration	09086.1	NOLT, Makah, LEKT, WDOT, Mike Haggerty	Capital	106.45	0.646
20	Dungeness River Instream Flow Restoration – Irrigation Efficiencies	09091.1	CCD, WUA	Capital	106.09	0.644
21	Elwha River Estuary Restoration Engineering Feasibility Project	12100	LEKT	Capital	104.79	0.636
22	McDonald Creek Barrier Removal and Channel Restoration	09039.2	JS'KT, WDFW, WSDOT, Agnew Ditch Co.	Capital	104.78	0.636

# NOPLE for Salmon: 3-Year Work Plan | 2013

Rank	Title	Project ID	Sponsor	Category	Weighted Mean Score	Normalized Score
23	Acquisition of Priorities identified in the "Western Strait of Juan de Fuca Salmonid Habitat Conservation Plan"	12096	NOLT	Capital	104.38	0.633
24	12 River Channel Migration Zone Assessment	09066.1	JS'KT, LEKT, Makah & CC	Non-Capital	83.78	0.621
<b>Those projects ranked 24 and above are encouraged to submit for 2013 SRFB/PSAR funding</b>						
25	Hoko River Remeander Engineering Feasibility Design	13101	NOSC, LEKT, Makah	Capital	100.57	0.610
26	Elwha Conservation Planning	09054	NOLT, LEKT & CC	Non-Capital	81.95	0.607
27	Dungeness River Habitat Resurvey	09063.1	JS'KT, US Forest Service, Tetra Tech	Non-Capital	81.22	0.602
28	Clallam County Culvert Inventory	09050.1	LEKT/CC	Capital	97.74	0.593
29	Elwha River Salmon Enumeration Weir	09076	NPS, USGS, USFWS, NOAA, WDFW & LEKT	Non-Capital	79.97	0.593
30	Gray's Marsh Restoration and Feasibility Design Phase 1	10077.1	WDFW	Capital	97.59	0.592
31	Clallam Watertype Inventory and Assessment	09053	WFC	Non-Capital	79.48	0.589
32	Elwha River Estuary Restoration	09018	LEKT, CC, WDFW & TNC	Capital	96.96	0.588
33	Washington Harbor Habitat Protection Project	09046	NOLT & JS'KT	Capital	95.46	0.579
34	Elwha Culvert Replacement	09019	ONP & LEKT	Capital	95.41	0.579

# NOPLÉ for Salmon: 3-Year Work Plan | 2013

Rank	Title	Project ID	Sponsor	Category	Weighted Mean Score	Normalized Score
35	Lower Morse Creek Restoration	10079.1		Capital	95.27	0.578
36	Nearshore Restoration Strategy for Twin Rivers	09011	CWI, WDFW, WDNR & LEKT	Capital	93.84	0.569
37	Hoko 9000 Road Abandonment	11083	LEKT/Rayonier	Capital	91.43	0.555
38	Siebert Creek Hwy 101 Fish Passage Restoration	09028.1	JS'KT - design project: conceptual bridge and site design to 10% engineering. WSDOT - final design, culvert removal, bridge construction.	Capital	91.27	0.554
39	Salt Creek Final Fish Passage Corrections Project	09015	LEKT, CCD & CC	Capital	90.81	0.551
40	Hoko 9000 Road Barrier Culvert	11082	LEKT/Rayonier	Capital	90.79	0.551
41	Pysht River LWD Project	11085	LEKT/Merrill and Ring	Capital	90.18	0.547
42	Elwha River Native Steelhead Brood Development Project	09048	LEKT	Non-Capital	73.38	0.544
43	Elwha Fish Propagation	11095	LEKT/ WDFW/ ONP	Non-Capital	73.21	0.543
44	NOPLÉ Area wide Monitoring Program	09075	NOPLÉ, CC, COPA & COS	Non-Capital	73.15	0.542
45	Clallam River Tributary Culvert Replacement	12097	NOSC	Capital	89.33	0.542
46	Salt Creek Habitat Protection	09013	NOLT	Capital	89.21	0.541

Rank	Title	Project ID	Sponsor	Category	Weighted Mean Score	Normalized Score
47	McDonald Creek Large Wood Restoration	10078.1	JS'KT	Capital	89.04	0.540
48	Siebert Creek Ecosystem Protection Phase 3 and 4	09027.1	NOLT	Capital	88.79	0.539
49	Little Hoko LWD Project	09001.1	LEKT	Capital	88.69	0.538
50	Bear and Cub Creek LWD project	11084	LEKT/Rayonier	Capital	88.61	0.538
51	Siebert Creek Large Wood Recovery	11090	JS'KT	Capital	88.31	0.536
52	Elwha River Nearshore Biodiversity Investigations	09056	NOAA, USGS & LEKT	Non-Capital	71.06	0.527
53	The Elwha Nearshore Action Plan	09055	CC & WDFW	Non-Capital	69.95	0.519
54	Port Angeles Harbor Basin Program	09059	NOPLE & MRC	Non-Capital	69.52	0.515
<b>Those projects ranked 54 and above are eligible to submit for 2013 SRFB/PSAR funding</b>						
55	Morse Creek Property Acquisition	09026	WDFW	Capital	81.38	0.494
56	Ennis Creek Barrier Culvert	11088	LEKT/COPA	Capital	80.64	0.489
57	Johnson Creek Riparian Protection and Restoration	12099	NOLT/ JS'KT	Capital	80.41	0.488
58	Hoko River- Emerson Flats LWD Supplementation	09002	Makah	Capital	78.54	0.476
59	Nelson Creek Fish Passage Barrier Removal Project	09012	CC & WDNR	Capital	77.54	0.470
60	IMW Restoration Treatments	09010	LEKT	Capital	77.29	0.469

# NOPLE for Salmon: 3-Year Work Plan | 2013

Rank	Title	Project ID	Sponsor	Category	Weighted Mean Score	Normalized Score
61	Dungeness Improved Fisheries Enforcement	09064	WDFW & JS'KT	Non-Capital	61.73	0.458
62	NOPLE area wide update stormwater management program	09072	NOPLE, CC, COPA & COS	Non-Capital	60.90	0.451
63	Jimmycomelately Creek & Dungeness River Habitat	09065	WDFW, JS'KT, NOLT & CC	Non-Capital	60.75	0.450
64	Chicken Coop Rd. Culvert Replacement	11094	CC	Capital	74.15	0.450
65	Ediz Hook Beach Nourishment	09023	COPA, Port of PA, WDNR & LEKT	Capital	71.33	0.433
66	Assess implementation of CAO, SMP & HPA ordinance.	09070	NOPLE, CC, COPA & COS	Non-Capital	57.15	0.424
67	Create Stable-funded Incentive program	09049	CC & CCD	Non-Capital	55.88	0.414
68	Lower Hoko River - Riparian Revegetation	09003	NOSC/ Makah	Capital	68.19	0.414
69	Ennis Creek Habitat Restoration & Protection	09020	WFC, LEKT & NOLT	Capital	66.67	0.404
70	NOPLE Area Wide Increase compliance with ordinances & codes	09071	NOPLE, CC, COPA & COS	Non-Capital	53.74	0.398
71	Clallam County Salmonid Outreach Planner	09051	CC & CCD	Non-Capital	52.78	0.391
72	Increase Recovery Capacity & Support NOPLA-wide	09067	NOPLA	Non-Capital	52.55	0.390
73	Sekiu Mainstem (RM 2-5) LWD Restoration	09005	Makah	Capital	63.38	0.384

Rank	Title	Project ID	Sponsor	Category	Weighted Mean Score	Normalized Score
74	Port Angeles Waterfront Property Acquisition	09024	NOLT, COPA, LEKT & VCRC	Capital	63.31	0.384
75	Sekiu, Clallam, Pysht Riparian Re-vegetation	09006	Makah/ LEKT	Capital	62.35	0.378
76	NOPLE-Area Wide Outreach Program	09068	NOPLE & WDFW	Non-Capital	49.36	0.366
77	NOPLE Area Adaptive Management Plan & Monitoring	09074	NOPLE, CC, COPA & COS	Non-Capital	48.12	0.357
78	Hoko River/ Hermans Creek - Instream LWD Supplementation	09004	Makah	Capital	58.71	0.356
79	Cassalery Creek Instream Flow Enhancement Project	09040	SWD	Capital	56.97	0.346
80	Clallam County Map Roadside Ditches	09052	CC	Non-Capital	44.09	0.327
81	Valley Creek Restoration	09021	VCRC, COPA	Capital	52.49	0.318
82	Dungeness River Management Team	09062	CC	Non-Capital	36.28	0.269
83	Elwha Morse Management Team	09058	CC	Non-Capital	35.26	0.261
84	WRIA-19 Watershed Council	09061	CC	Non-Capital	30.69	0.227

Project Information and How it Relates to the Recovery Plan											Project Planning						Project Cost and Sponsor						
No.	Project Type	Plan Category	Project Name	Project Description (brief description)	Limiting Factors	Document Reference for limiting factor (Recovery Plan, Chapter 3 - Habitat Protection)	Habitat Type (HWS items - i.e. riparian, estuary, river delta, Nearshore, etc.)	Activity Type (HWS items - i.e. fish passage, instream flow, sediment reduction, etc.)	Project Performance (restore 30 acres of floodplain)	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status (Conceptual, Feasibility completed, land acquisition completed, design completed, permitting completed, construction completed)	2014 Activity to be funded	2014 Estimated Cost	2015 Activity to be funded	2015 Estimated Cost	2016 Activity to be funded	2016 Estimated Cost	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)
<b>Capital Projects</b>																							
<b>Habitat</b>																							
12096	Acquisition for Protection	Capital	Acquisition of Priorities identified in the "Western Strait of Juan de Fuca Salmonid Habitat Conservation Plan"	Conserve the highest priority parcels identified in The Western Strait of Juan de Fuca (WSJF) Habitat Conservation Plan (Draft)	Floodplain development and alterations; Loss of large woody debris; Estuary and nearshore alterations; Degraded water quality and high stream temperatures	Puget Sound Recovery Plan – Habitat: Protect Existing Physical Habitat & Habitat Forming Processes; Puget Sound Partnership – Protect Habitat; Salmonid and Steelhead Habitat Limiting Factors in the Western Strait of Juan De Fuca – protect channel migration zone and conifer riparian areas; NOPL Recovery Strategy 2008 - implement salmon recovery plans to protect fish habitat & maintain ecosystem function; WRIA 19 Salmonid Restoration Plan- Draft - Protect habitat	Riparian Habitat	Acquisition	Protect the highest priority parcels in WRIA 19	Chinook	coho, and chum salmon, and steelhead and coastal cutthroat trout	design completed	Acquisition								donated land value	PSAR or SRFB	

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09005	Restoration	Capital	Sekiu Mainstem (RM 2-5) LWD Restoration	The placement of LWD in the Sekiu River	Channel Structure and Complexity, High Water Temperatures, Riparian Areas & LWD Recruitment	Water Resource Inventory Area 19 (Lyre-Hoko) Salmonid Restoration Plan (draft dated April 20, 2008)	Instream Riparian	Instream work	12 LWD jams in a 3 mile reach	Chinook	Chum, Coho, Steelhead & Cutthroat	Conceptual		Permitting & design	\$25,000	Construction	\$375,000	2012	Makah	\$400,000	\$50,000	SRFB	
09006	Restoration	Capital	Sekiu, Clallam, Pysht Riparian Re-vegetation	Restore the riparian zone along the rivers to improve water quality and restore CMZ habitat and function.	Channel structure and complexity, Excessive Sediment, and Water Quality	WRIA 19 LFA (chapter on the Pysht and the Clallam reference the lack of LWD ), and the Water Resource Inventory Area 19 (Lyre-Hoko) Salmonid Restoration Plan (draft dated April 20, 2008)	Riparian revegetation	Stream bank work & sediment reduction	Replant trees	Chinook	Chum, Coho, Steelhead & Cutthroat	Conceptual		Design & planting	\$130,000	Design & planting	\$125,000	2012	Makah, LEKT, & NOSC	\$255,000	\$10,000	SRFB	
13101	Future Habitat Project Development	Capital	Hoko River Remeander Engineering Feasibility Study	Perform an engineering assessment of the feasibility of reconnecting the historic meander in lower river that was intentionally cut off in the 1940's	Restore significant areas of historic estuary and floodplain	WWRIA 19 Restoration Plan	Estuary, Floodplain, Associated wetlands	Engineering Feasibility Analysis	Complete Final Design and Cost estimate for restoring lower Hoko River	Chinook	Coho, Chum, Steelhead, Cutthroat	Conceptual		Design	\$200,000	Design	\$200,000	winter 2016	NOSC, LEKT, Makah	\$400,000	Unknown at this time	PSAR	
11082	Restoration	Capital	Hoko 9000 Road Barrier Culvert	Replace existing culvert with 130' bridge	restore historic access to ~3 miles of habitat	Hoko Watershed Analysis Appendices E & F	in stream/floodplain	fish passage	restore access to ~3 miles of habitat	coho	chinook, chum, steelhead	Preliminary design	350,000-450,000					2014	LEKT/ Rayonier	350,000-450,000	50%		

NOPLE for Salmon: 3-Year Work Plan **2013**

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11083	Restoration	capital	Hoko 9000 Road Abandonment	Remove sidecast, stream crossings and restore drainage patterns	Reduce landslide rate and sedimentation. Improve riparian and in channel habitats	Hoko Watershed Analysis Appendices E & F	instream/floodplain	sediment reduction/riparian/in channel	remove sidecast and stream crossings at 36 locations	coho	chinook, chum, steelhead	Preliminary design			225,000-350,000			2014	LEKT/Rayonier	225,000-350,000	50%		
09001.1	Restoration	capital	Little Hoko LWD Project	Add 200 key pieces of LWD using heavy lift helicopter	improve floodplain processes/spawning and rearing habitat	Hoko Watershed Analysis Appendices E & F	floodplain	in channel habitat conditions	200 key pieces (100/mile)	coho	chinook, chum, steelhead	Conceptual				250,000-350,000		2014	LEKT	250,000-350,000	15%		
09002	Restoration	Capital	Hoko River-Emerson Flats LWD Supplementati on	This project will restore spawning and rearing habitat in the Hoko Mainstem	Severe Lack of Large Woody Debris (LWD)	Hoko River Fit To Strategy on www.Noplegroup.org, and Hoko Watershed Analysis Riparian Function from WDNR	Riparian	Riparian/Instream Habitat Project / Habitat Complexity	Add LWD to the Hoko Mainstem	Chinook	Coho, chum, steelhead and cutthroat	Conceptual	LWD Purchase and ELJ Installation \$400,000	LWD Purchase and ELJ Installation	\$300,000			2011	Makah	\$700,000	\$105,000	unknown	
09003	Restoration	Capital	Lower Hoko River - Riparian Revegetation	This project will restore the riparian zone along the Hoko Mainstem, RM 1-7, known Fall Chinook habitat.	Degraded water quality and high stream temperature, and Degraded riparian conditions	WRIA 19 (Lyre-Hoko) Salmonid Restoration Plan, draft dated April 20, 2008, Chapter 5	Riparian revegetati on	Riparian Habitat / Riparian Revegetation	Revegetate the Hoko Mainstem (RM 1-7)	Hoko Fall Chinook	Coho, chum, steelhead and cutthroat	Conceptual	order trees, identify areas \$5,000	plant trees	\$250,000			2011	NOJC & Makah	\$255,000	\$38,250	unknown	
09004	Restoration	Capital	Hoko River/Hermans Creek - Instream LWD Supplementati on	The placement of LWD to Herman Ck along with LWD placement within the month as it enters Hoko.	Loss of Tributary Habitat Diversity Riparian Areas & LWD Recruitment Stream Substrate	WRIA 19 LFA (chapter on the Hoko references the lack of LWD ), and the Water Resource Inventory Area 19 (Lyre-Hoko) Salmonid Restoration Plan (draft dated April 20, 2008)	Instream Riparian	Instream work	9 LWD jams placed within 2,500 meter of stream	Chinook	Coho, Steelhead & Cutthroat	Conceptual		Permitting & design \$25,000		Construction	\$225,000	2012	Makah	\$250,000	\$60,000	SRFB	

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11084	Restoration	capital	Bear and Cub Creek LWD project	Add 150 key pieces of LWD using heavy lift helicopter	improve floodplain processes/spawning and rearing habitat	Hoko Watershed Analysis Appendices E & F	floodplain	in channel habitat conditions	150 key pieces (75/mile)	coho	chinook, chum, steelhead	Conceptual				100,000-155,000		2014	LEKT/Rayonier	100,000-155,000	15%		
12097	Restoration	Capital	Clallam River Barrier Removal	Removal of two 24" perched culverts and replacement with a bridge on a tributary to the Clallam River. The project will allow fish access to a nearly 16 acre wetland and restore hydrologic connectivity between the wetland, the tributary and the Clallam River.	Barriers to fish passage" and "Poor off-stream rearing and overwintering habitat"	2008 NOPL Strategy	Instream	fish passage	restore access to 16 acre forested wetland	coho	steelhead	Feasibility complete	Project survey, data collection, design, permitting	5000	Bridge construction	\$35,000-\$125,000		2015	NOSC	\$130,000	Volunteers, RFEG program, foundation	SRFB	
11085 (09007.1)	Restoration	capital	Pysht River LWD Project	Add LWD to 12.5 miles of SF Pysht and Pysht River	improve floodplain processes/spawning and rearing habitat	WRIA 19 Limiting Factors Analysis; WRTIA 19 recovery Plan	in stream/floodplain	in channel habitat conditions	Restore habitat in 12.5 miles of mainstem Pysht River and SF Pysht River	coho	chinook, chum, steelhead	Conceptual							LEKT/Merrill and Ring	~\$50,000/project reach	15%		
09086.1	Acquisition for Restoration	Capital	Pysht Floodplain Acquisition and Restoration	Restoration: install engineered log jams, create roughness elements within the active floodplain; Acquisition: protect additional along the Pysht River, particularly priority parcels in Western Straits Conservation Plan	floodplain impacts, lack of large woody debris, and conversion of conifer riparian forest	Salmon and Steelhead Habitat Limiting Factors in the Western Strait of Juan de Fuca, page 7	Riparian, instream, floodplain	Land protection, instream habitat project	Conserve from estuary to river mile 9.9, and restore instream habitat	Chinook	chum, cutthroat, winter steelhead, and coho	Land acquisition completed, more acquisition proposed; design of ELJs funded and under contract	ELJ design and implementation, Phase III; and land acquisition, Phase I	\$200,000 for ELJ implementation; Acquisition: land acquisition, future phases	Acquisition: \$3,000-\$8,000 per acre for acquisition	land acquisition	Acquisition: \$3,000-\$8,000 per acre for acquisition	41243	Multiple land trusts; Makah Tribe, Lower	Design and implementation; Phase IV and future: \$3,000-\$8,000 per acre for ELJ design, and \$30,000 for wood		Makah Tribe	

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09009.1	Restoration	Capital	Pysht River Salt Marsh Estuary Restoration	Remove dredge deposits from 20.5 acres of historic saltmarsh habitat	Restore salt marsh and associated tidal channels which provide critical habitat for rearing	Pysht Floodplain Assessment (Haggerty et al 2006); SJF Historical Nearshore Assessment (Todd et al 2006); Pysht Estuary Engineering Feasibility Assessment (McCullough et al. 2010)	estuary	salt marsh restoration	remove suction dredge deposits on historic salt marsh habitats and reestablish tidal channel network	chum	chinook, coho	30% Design						2014	LEKT/Merrill and Ring/ Cascade Conservancy	\$4,000,000	15%		
09010	Restoration	Capital	IMW Restoration Treatments	Complete LWD Restoration in portions of IMW Watersheds (Sadie Creek, East Twin)	LWD, Side Channel, riparian	IMW Study Plan, WRIA 19 Recovery Plan, WRIA LFA	Riparian/Floodplain	Instream Habitats, Riparian	Add LWD in form of large key pieces to previously untreated/under treated reaches	Coho	steelhead, chum	Conceptual	Permits and Engineering	\$50,000	Construction	\$250,000	Construction	\$250,000	2012	LEKT	\$550,000	\$50,000	SRFB
09011	Restoration	Capital	Nearshore Restoration Strategy for Twin Rivers	The proposal consists of removing rock & sheet pile surrounding a 3 acre pier (also called a 'mole') located entirely on state owned Department of Natural Resources (WDNR) leased tidelands, and cutting a channel along the base of the pier.	WRIA 19 LFA, Smith 1999	Recovery plan, Hood Canal/Eastern Strait of Juan de Fuca Summer Chum	Nearshore	Nearshore Action Plan	Removal of 2.4 acre pier (62,600 cy of fill), steel & creosote treated piles along with about 13,000 cy of rip rap.	Chinook	Coho, bulltrout, chum, cutthroat, steelhead	Conceptual	Permits & Engineering	\$50,000	Construction	\$480,000			2011	CWI, WDFW, WDNR & LEKT	\$520,000	\$78,000	SRFB

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10080.1	Acquisition for Protection	Capital	Lyre River Protection and Restoration	Protect habitat connectivity from the mountains to the shoreline within the Lyre River watershed, 85% of which is in public ownership or the National Park, through conservation easement and fee simple acquisition. Restoration phases include structure removal, undoing the channelization of the lower river, and adding wood complexity.	Hydrology and sediment; Channel structure and complexity; & LWD Recruitment	WRIA 19 (Hoko-Lyre) Watershed Plan Draft (throughout the plan); and Draft WRIA 19 Salmonid Restoration Plan (Section 7.2.2.1); and Western Straits Conservation Plan (Priority #10, Nearshore)	Riparian, Wetland, Estuary, and Nearshore (bluff-backed beach, and barrier beach)	Land protection; Watershed habitat connectivity; Protection of sediment & hydrology processes in the nearshore; Restoration of in stream habitat & floodplain	Conserve 280 acres in Phase I through fee simple acquisition, and additional land in the watershed in future phases, through fee simple or conservation easement acquisition; removal of a house currently located within the floodplain; undoing the channelization of the lower river; and adding wood complexity	Chinook	Steelhead, Chum, Cutthroat, Bull trout, and Pink	Conceptual, Feasible	Purchase of 280 acres, removal of the home in floodplain	4000000	Purchase of additional land or conservation easements along the Lyre River	unknown	Undoing the channelization of the lower river; and adding wood complexity	unknown	41243	North Olympic Land Trust	\$4,000,000 million for phase I	\$600,000 in donated land value, donated reveg, and donated legal services	\$2,698,812 from ESRP and \$707,000 from PSAR

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09012	Restoration	Capital	Nelson Creek Fish Passage Barrier Removal Project	Restore 1 stream-mile of Nelson Creek to fish passage by replacing 2 fish passage barrier culverts with fish friendly culverts	Barriers to fish passage	WRIA 19 Salmonid Restoration Plan, Habitat Protection Goal 5; WRIA 19 LFA	Riparian	Fish Passage	Restore 1 stream mile of Nelson Creek on two separate stream stems to fish passage	Coho	Steelhead, Chum, Cutthroat	Conceptual design		Permitting and design	\$30,000	Construction	\$320,000	2012	CC & WDNR	\$350,000	\$30,000	SRFB	
09013	Acquisition for Protection	Capital	Salt Creek Habitat Protection	Protect the best existing habitat on Salt Creek's freshwater and marine shorelines and estuary through conservation easement and fee simple acquisition.	High Development Potential / Conversion, Lack of in-river large woody debris, Barriers to fish passage, Riparian area degradation, Impaired instream flows.	Salt Creek Watershed: An Assessment of Habitat Conditions, Fish Populations and Opportunities for Restoration, by Mike McHenry, Randall McCoy and Mike Haggerty	Riparian, Estuary, Nearshore	Instream Habitats, Riparian	200+acres protected	Salt Creek Coho	Salt Creek Winter Steelhead, Mid-Strait Cutthroat Trout, Chinook, & Chum	Conceptual	Outreach and Appraisals	\$30,000	Acquisition	\$4,000,000	\$2,000,000	2012	NOLT	\$6,030,000	\$500,000	unknown	
09014	Restoration	Capital	Salt Creek Salt Marsh Reconnection	Restore hydrologic connectivity to area behind dike road	Barrier to fish passage, estuarine loss	Salt Creek Watershed: An Assessment of Habitat Conditions, Fish Populations and Opportunities for Restoration, by Mike McHenry, Randall McCoy and Mike Haggerty	Nearshore	Fish Passage	Open up over 20 acres of estuarine habitat	Salt Creek Coho	winter steelhead, Mid-Strait cutthroat trout, chinook, chum	Initial feasibility complete		Studies needed for design & permitting, alternatives analysis, design selection and development	350,000	Construction	1,500,000	2015	NOSC	\$1,850,000	as needed	SRFB, PSAR and other	

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96	Restoration	Capital	Salt Creek LWD		improve floodplain processes/spawning and rearing habitat		instream/floodplain	in channel habitat conditions		Salt Creek Coho	winter steelhead, Mid-Strait cutthroat trout, chinook, chum								LEKT	\$400,000		SRFB	
09015	Restoration	Capital	Salt Creek Final Fish Passage Corrections Project	Removal of about 13 barrier pipes in Salt Creek	Barriers to fish passage, WRIA 19 LFA	Salt Creek Watershed: An Assessment of Habitat Conditions, Fish Populations and Opportunities for Restoration, by Mike McHenry, Randall McCoy and Mike Haggerty	Instream	Fish Passage	Remove 13 barriers	Salt Creek Coho	Salt Creek Winter Steelhead, Mid-Strait Cutthroat Trout, Chinook, & Chum	Conceptual		Design & permitting	\$200,000	Construction	\$3,000,000	2012	LEKT, CCD & CC	\$3,200,000	\$480,000	SRFB	
09016.1	Restoration	capital	Elwha ELJ Project	Install 10 new ELJ's	improve floodplain processes/spawning and rearing habitat	Elwha Fisheries Restoration Plan (Ward et al. 2008)	in stream/floodplain	in channel habitat conditions	Install 10 new ELJ's	all species	all species	Preliminary design				850,000		2014	LEKT	\$850,000	15%		
11087	Restoration	capital	Elwha Revegetation Project	Control Exotic Plants and conduct revegetation	Improve/accelerate recovery of riparian/floodplain forest in drained reservoir areas	Elwha Revegetation Plan/Elwha Fisheries Restoration Plan (Ward et al. 2008)	floodplain/riparian/uplands	floodplain revegetation	Control exotic plants and conduct revegetation at Elwha project area	all species	all species	Implementation						2014	LEKT/ONP	150,000-250,000	50%		

NOPLE for Salmon: 3-Year Work Plan **2013**

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12100	Future Habitat Project Development	Restoration Assessment	Elwha Estuary Restoration Engineering Assessment	Complete engineering design on restoration concepts (90%)	Degraded destuary and nearshore conditions	Elwha Fish Recovery Plan	Estuary/Ne arshore	Restoration Assessment	Restore Habitat Forming Processes in ~80 acres	chinook	chum, pink	Conceptual Study Completed, propose 90% design	90% Design	\$250,000				2014	LEKT	\$250,000			
09018	Restoration	Capital	Elwha River Estuary Restoration							Chinook	Chum, Pink												
09019	Restoration	Capital	Elwha Culvert Replacement	Project will restore Bull trout and anadromous salmonid refugia in the Elwha Watershed	Barriers to fish passage, WRIA 19 LFA	Elwha Fish Recovery Plan, chapter 8	Instream	Fish Passage	Open up 3/4 miles of habitat	Bull Trout	Cutthroat, Puget Sound Steelhead	30% Design & Permitting	Bidding	\$100,000	Construction	\$400,000		2010	ONP & LEKT	\$500,000	\$75,000	SRFB	
13102	Restoration	Capital	Little River LWD	Place 120 pieces of LWD in Little River between RM 0-1.5	Improve Spawning and Rearing Habitat for multiple species of salmonids	Elwha Fish Restoration Plan (NOAA 2008)-see Habitat Restoration Chapter	Floodplain, In-Channel Habitat	Habitat Improvement	Restore 1.5 miles of habitat	Chinook	Coho, Steelhead, Pink, Chum	Conceptual	Design and Permitting	\$50,000	LWD Purchase and Staging	\$100,000	LWD Placement	\$100,000	Winter 2016	LEKT	\$250,000	Unknown at this time	SRFB

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13103	Restoration	Capital	Ediz Hook Beach Restoration Phase 3	Expand beach restoration/armor removal actions on ~1.0 of south shore of Edfiz Hook	Remove hard armoring and restore nearshore beach and dune habitats to benefit forage fish and salmonid migration corridors		Nearshore	Habitat Improvement	Restore 1.1 miles of beach habitat to east and west of Phase 1 and Phase 2 Restoration areas	Forage Fish	Chinook, pink, chum, coho	Design partially completed (A Frame design would be expanded to proposed restoration areas)	Design and Permitting	\$50,000	Design and Permitting	\$50,000	Construct	\$400,000	Winter 2016	LEKT, WDNR, COPA	\$500,000	Unknown at this time	PSAR
09023	Restoration	Capital	Ediz Hook Beach Nourishment	This project will restore & maintain the inner spit on Ediz Hook	Degraded Nearshore and estuarine conditions and loss of associated habitat	Executive Summary: Nearshore function of the central Strait of Juan de Fuca for juvenile fish, including Puget Sound Chinook salmon, Chapter 1; and SALMON AND STEELHEAD HABITAT LIMITING FACTORS WATER RESOURCE INVENTORY AREA 18, the Chapter on MARINE HABITAT LIMITING FACTORS.	Nearshore	Marine Shoreline Project	Restore shoreline morphology and estuarine conditions	Forage fish	pink, chum,	Conceptual	design and permitting		\$100,000	Construction	\$375,000	2012	City of PA, Port of PA, WDNR & LEKT	\$475,000	\$71,250	SRFB, PSAR	
09021	Restoration	Restoration	Valley Creek Phase 3 Restoration	The remainder of 1,300 linear feet of stream channel and retrofitting of 1,750 linear feet of culvert to improve fish passage.	Barriers to fish passage” and “Poor stream geomorphology”	2008 NOPLE Strategy	Instream and riparian	fish passage	restore access to previously restored upstream habitat	coho	steelhead	Land acquisition and design complete. Permit applications complete	Project construction	\$1.8 M				2015	City of PA	\$1.8M	\$0	SRFB	

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11088	Restoration	Capital	Ennis Creek Barrier Culvert	Replace existing culvert with 130' bridge	Improve fish passage conditions for 5+ miles of upstream habitat	Ennis Creek Conceptual Plan (Shreffler et al. 2010)	in stream/floodplain	fish passage	improve access to ~5 miles of habitat	coho	steelhead	Conceptual/Preliminary Design				250,000-400,000		2014	LEKT/GOP	250,000-400,000	15%		
09020	Restoration	Capital	Ennis Creek Habitat Restoration & Protection	Continuation of prior restoration including addition of LWD and boulder placement; and augment existing wetland and riparian tree planting.	Loss of Habitat, Riparian Areas & LWD Recruitment, and Water Quality	WRIA 18 Watershed Plan and LFA	Riparian, Upland, Wetland	Riparian, Upland, and Wetland Habitat project	Restore and protect Ennis Creek's relatively pristine salmonid habitat	Bull Trout	Coho, Cutthroat, and Winter Steelhead	Conceptual		LWD and boulder purchase and placement	\$75,000	order trees, identify areas, and plant trees in the existing wetland and riparian area	\$75,000	2012	WFC, LEKT & NOLT	\$150,000	\$20,000	PA Mitigation and other	
09024	Acquisition for Restoration	Capital	Port Angeles Waterfront Property Acquisition	Acquire a 2 acre waterfront property at Oak Street for public beach/estuary restoration	Habitat Loss, degraded Nearshore and estuarine conditions.	Port Angeles Shoreline Rehabilitation Plan p.2, From Salmon and Steelhead Limiting Factors, WRIA 18 p. 147	Nearshore /Marine Shoreline	Nearshore Restoration & fish passage	2 acres urban waterfront and estuary protected for restoration	Chinook	Coho and winter steelhead	Conceptual		Purchase	\$2,500,000			2012	NOLT, COPA, LEKT & VCRC	\$2,500,000	\$500,000	unknown	
09025	Restoration	Capital	Morse Creek Remeander	Reconnect Morse Creek with its historic floodplain to restore habitat complexity and stability.	Riparian, floodplain, spawning and rearing habitat	WRIA 18 LFA p 5&6	Instream, Riparian	Habitat complexity, flow reduction, floodplain reconnection	Restore 9 acres of floodplain and 1,700' of creek channel, underplanting 9 acres with conifers	Steelhead	Sea-run cutthroat trout, Pink, chum, Bull Trout	Design approaching 100% late 2009, permitting docs under development, majority construction funds secured	Construction	\$1,275,000	Revegetation (underplanting deciduous forest with conifer)	\$15,000		2011	NOSC	\$1,300,000	\$200,000	SRFB	

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09026	Acquisition for Restoration	Capital	Morse Creek Property Acquisition	Acquire 2 lots in Morse Creek floodplain.	Riparian, floodplain, spawning and rearing habitat	WRIA 18 LFA p 5&6	Instream, Riparian	Habitat complexity, flow reduction, floodplain reconnection	Acquisition of two parcels on Cottonwood Lane along Morse Creek	Steelhead	Sea-run cutthroat trout, Pink chum, Bull Trout	One landowner contacted and consent given to do an appraisal. No further action until funds acquired. Second landowner not contacted yet		Landowner contact, property appraisals, legal fees, property purchase \$950,000	property purchase if not completed in 2011		2012	WDFW	\$950,000	\$142,500	SRFB		
10079.1	Restoration	Capital	Lower Morse Creek Feasibility Study	Enhance habitat in lower Morse Creek	Instream habitat, lwd, pools, riparian, floodplain	WRIA 18 LFA,	Instream & Estuary	Instream Habitat, riparian habitat, nearshore	Improve habitat conditions in 1 mile of lower Morse Creek	steelhead, coho	pink, chum, bull trout, chinook, cutthroat trout	New project		Studies needed for design & permitting, alternatives analysis, design selection and development 200,000	Construction/Planting 300,000			NOSC	500,000	as needed	SRFB, PSAR and other		
09027.1	Acquisition for Protection	Capital	Siebert Creek Ecosystem Protection	The goal of Phase III and IV is to conserve additional land along Siebert Creek by: (1)Conserving 200-acre property that contains the longest continuous reach of targeted riparian buffer . (2) Protection of another 1/3rd of a mile of the Creek, south of the existing protection accomplishments.	Degraded channel condition in some reaches	Siebert Creek Watershed Assessment, p. 6	Riparian, Marine bluff	Protection of intact ecosystem functions	40 acres of marine bluff protected, 245 acres of riparian buffer protected.	Coho	fall chum, winter steelhead, cutthroat	Feasibility completed	Purchase of 200 acre property 2M	Riparian conservation easements \$765,000	marine bluff conservation easements \$680,000	2012	North Olympic Land Trust	3445000	1000000	Clallam County			

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09028.1	Restoration	Capital	Siebert Creek Hwy 101 Fish Passage Restoration	The Hwy 101 box culvert at river mile 2.4 is a serious, partial barrier to 1) upstream fish passage and 2) the downstream transport of large wood. Fish passage and large wood transport will be restored by removing the culvert and replacing it with full-spanning bridge.	Siebert Creek's anadromous length is approximately 10 miles, but fish passage is severely impaired at river mile 2.4 by the Hwy 101 box culvert. The culvert is equipped with a sub-standard fishway that provides, at best, partial fish passage. The culvert is too small to accommodate an efficient fishway, and the large amount of bedload transported by Siebert Creek makes fishway maintenance very problematic. The project will remove the box culvert and replace it with a bridge to restore unimpeded fish passage to prime spawning and rearing habitat upstream for Puget Sound steelhead, coho, and coastal cutthroat. Due to its small size, the culvert also hinders the downstream transport of large wood, thereby depriving the lower 2.4 miles of Siebert Creek of this important habitat-forming material.	The Siebert Watershed Analysis calls for replacement of the culvert with a bridge (2004, Siebert Technical Advisory Group). WRIA 18 Watershed Report: Correct fish passage problems at Highway 101 by replacing the existing culvert crossing with a bridge, as recommended by WDFW.	Riparian	Fish passage	Opens approximately 75% (7.6 miles) of the stream's anadromous habitat to unimpaired accessibility for steelhead, coho, and cutthroat. The project will also produce habitat benefits to the lower 2.4 miles of Siebert Creek by restoring the downstream transport of large wood.	Puget Sound steelhead, coho	Cutthroat								JSKT - design project: conceptual bridge and site design to 10% engineering. WSDOT - final design, culvert removal, bridge construction.	\$12 to \$15 million		10% design - SRFB, PSAR, full design & construction - WSDOT	
11090	Restoration	Capital	Siebert Creek Large Wood Restoration	Build design and build logjams (DBLJ) from Rm 0 to 2.4	Develop and implement short-term LWD strategy in lower Siebert Creek to restore LWD and pools from the mouth to HWY 101	WRIA 18 LFA pg 3.12-7	instream and riparian	Large wood recovery	Build roughly 30 logjams per mile to recover salmonid habitat	ESA winter steelhead, coho	Sea-run cutthroat trout and resident trout	Conceptual	Phase I logjam construction	\$50-100K	Phase II logjam construction	\$50-100K	Phase II logjam construction	\$50-100K	2015	JSKT/LEKT	\$300,000	DNR wood donations/match	SRFB, CSF
10078.1	Restoration	Capital	McDonald Creek Large Wood Restoration	Build design and build logjams (DBLJ) from RM 0 to 4.9, the entire anadromous reach of the creek.	LWD, monitor upper watershed forest condition and landslide hazard on USFS land, reduce Dungeness R water influence.	WRIA 18 LFA pg 124.	Instream and riparian	large wood recovery	Build roughly 30 logjams per mile to recover salmonid habitat	ESA winter steelhead, coho	Sea-run cutthroat, resident trout, potential fall chum reintroduction?	Phase I completed, Phase II funded and in design/permitting with construction in 2011. Phase III in project conceptualization.	Phase II logjam construction	funded	Phase III logjam construction	\$50-100k	Phase IV logjam construction	\$50-100k	2020	JKT	\$750k-\$1 million		SRFB, PSAR, CSF

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09039.2	Restoration	Capital	McDonald Creek Barrier Removal	The project will restore safe, unimpeded upstream and downstream fish passage conditions at the Agnew Irrigation District water diversion facility by simply removing the entire facility from the stream. Upstream of the facility, 4.5 miles of coho habitat and 6.1 miles of steelhead and cutthroat habitat will be made freely accessible. Concurrent with barrier removal, the adjacent 400 feet of degraded stream channel will be restored. The project will also result in the cessation of Dungeness River discharges into McDonald Creek, which will eliminate the potential for Dungeness River salmon to be attracted into McDonald Creek. The conveyance of stormwater into McDonald Creek via the Agnew Irrigation ditch system will also be eliminated. The project will be accomplished by 1) constructing a new upland ditch/pipeline system to replace the existing instream irrigation facility, 2) removing from McDonald Creek the Agnew diversion dam, head gate, canal, bypass, and fish screen, and 3) restoring the degraded channel and floodplain downstream of the diversion dam and under the Hwy 101 bridge.	A 5-foot high irrigation diversion dam, equipped with a small and intermittently functional steep-pass fishway, spans McDonald Creek. An irrigation canal, water and fish bypasses, and a fish screen occupy the Creek's floodway, severely constricting the channel. This irrigation facility causes numerous fish passage, habitat, and biological problems: <ul style="list-style-type: none"> <li>• The fishway only functions when 1) it's free of debris, 2) conveys the proper amount of water, and 3) discharges into a suitable attraction area. During much of the year these conditions are not met, and upstream adult and juvenile fish migration is blocked. 4.5 Miles of coho habitat and 6.1 miles of steelhead and cutthroat habitat can be inaccessible to fish. Even when technically functioning, the fishway provides little attraction flow and adult fish can harm themselves leaping at the dam.</li> <li>• Fish cannot migrate safely downstream through the facility</li> <li>• Currently the Agnew Irrigation District uses McDonald Creek as a part of its irrigation water conveyance system. <ul style="list-style-type: none"> <li>• Stormwater</li> <li>• Channel degradation</li> </ul> </li> </ul>	WRIA 18 LFA	Freshwater stream	Fish passage, habitat restoration, water quality improvement	4.5 miles for coho and 6.1 miles for steelhead and cutthroat	coho, steelhead	cutthroat	Design work is underway and will be completed in early 2013. Permitting will begin soon thereafter.	Begin construction	\$1 million. An accurate estimate will be available in early 2013.						Jamestown SKiallam Tribe	\$1 million. An accurate estimate will be available in early 2013.	NEWE, American Rivers, SRFB	

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13104	Restoration	Capital	3 Crabs Estuarine and Nearshore Restoration	Removal of infrastructure from nearshore and estuary. Removal of armoring from nearshore and estuary. Removal of fill, septic, channel constrictions, dikes and creosote. Relocation of a roadway to allow restoration of estuarine processes. Recreation of ~5 acres of historic estuarine wetlands, reconnection of floodplain wetlands to improve habitat connectivity between >40 Acres of wetlands heavily utilized by salmon.	Floodplain Modification, Channel Condition, Riparian Condition, Water Quality/Quantity, Biological Processes, Estuarine, Shoreline Armoring, Loss of Intertidal/Nearshore Vegetated Habitat	WRIA 18 LFA	Riparian, Estuary, River Delta and Nearshore	Dike removal, Tidal Hydrology Restoration, Revegetation, Floodplain Restoration, Channel reconfiguration, Wetland Recreation, Fill Removal, Armoring Removal, Habitat Forming Process Restoration, Dike Removal,	Restore 5 Acres of wetlands and improve habitat connectivity to over 40 acres of coastal wetlands. Remove channel constrictions, dikes and armoring from ~800LF stream channel. ~Realign 1,000 LF creek into historic channel. Improvement of one stream crossing. Revegetate and place LWD on ~7 Acres of intertidal, estuarine and riparian. Remove 10 tons of beached creosote and 165 creosoted pilings. Remove armoring and restore sediment transport to 450LF of beach.	chinook, chum, steelhead, bull trout	coho, cutthroat, pink	Acquisition Complete, Conceptual	Site Prep	\$50,000	Project survey, data collection, preliminary design, permitting	\$100,000	Final Design	\$100,000	2020	NOSC	\$4,000,000	Volunteers, RFEQ program, foundation	SRFB, ESRP, USFWS-CWG, EcoTrust

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09029.1	Restoration	Capital	Dungeness River Large Wood Restoration (formerly project 29, Dung R ELJ)	Build ELJ's and DBLJ's in Dungeness River from river mile (RM) 2.7 to 18.8 and in the Gray Wolf River from RM 0.0 to 2.0.	Channel structure and complexity	WRIA 18 LFA page 105, Puget Sound Recovery Plan pg 324	Instream	Large wood recovery	Build roughly 50 log jams in 18 miles of mainstem river.	Puget Sound Chinook, Puget Sound steelhead, summer chum, fall chum, pink, bull trout	coho	At least two more logjams will be constructed at RM 5.2 to 6.0 ELJ's pending property acquisition. This will add to the 7 ELJ and 2 DBLJ in this reach.	Dungeness R. RM 12-18 and Gray Wolf RM 0-2 design and Forest Service approval and permitting process. \$120,000	Dungeness R. RM 12-18, and Gray Wolf RM 0 to 2 ELJ construction. \$800,000				2019	Jamestown S'Klallam Tribe/Cialliam County	\$5 million		SRFB	
09030.1	Acquisition for Protection		Dungeness Riparian Habitat Protection	The project will protect many previously identified Dungeness River riparian properties downstream of DNR ownership (approximately river mile 12.0) through the purchase of property and conservation easements. High quality riverine forest habitat, particularly those areas with side channels, is a priority for protection. Also included for acquisition are properties needed for flood plain restoration projects, an especially high priority on the Dungeness River. The project's goal is to purchase fee simple titles and conservation easements on approximately 160 acres and about 4 miles of river channel in 8 years. The project will be undertaken as a series of annual phases.	Protecting functional side channels, preventing floodplain modifications, protecting water quality by maintaining off-channel habitat and functional floodplains, and protecting riparian forests	Puget Sound Recovery Plan, pages 324, 325	Riparian, river delta		160 acres, 4 river miles	Puget Sound Chinook, Puget Sound steelhead, Coastal-Puget Sound bull trout, Hood Canal/Eastern Strait of Juan de Fuca summer chum, pinks, fall chum.	Coho, cutthroat.	Numerous acquisitions have been completed and new purchases are in the planning stage.				Purchase of 30 acres and 1,550 feet of river channel, both sides. \$500,000	2014	JSKT, WDFW, North Olympic Land Trust	\$9,000,000		SRFB, National Coastal Wetlands Conservation		

NOPLE for Salmon: 3-Year Work Plan **2013**

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09031.1		Capital	Dungeness River Riparian Restoration (replaces project 31)	Riparian restoration through noxious weed control, replanting native trees, and plant maintenance from the mouth to RM 11.	Long-term wood recruitment, cover for fish and wildlife, food production	NOPLE 2011 Draft Strategy Table C, WRIA 18 LFA p. 105, Puget Sound Recovery Plan-Dungeness p. 325.	floodplain	noxious weeds, riparian restoration, plant maintenance	Roughly 3 miles of understocked forest and 11 miles of noxious weeds to control and replant with native trees.	Puget Sound Chinook, Puget Sound steelhead, summer chum, fall chum, pink, bull trout	coho	We have treated roughly 25% of the river corridor for Buddleia. We have plantings at Rivers End and behind the Corps dike. Much remains to be done.	Buddleia control and replanting with cottonwood and western red cedar. Outreach to landowners for riparian restoration. Replanting understocked riparian areas.	\$30,000, with \$20k in hand	Buddleia control and replanting with cottonwood and western red cedar. Outreach to landowners for riparian restoration. Replanting understocked riparian areas.	\$50,000	Buddleia control and replanting with cottonwood and western red cedar. Outreach to landowners for riparian restoration. Replanting understocked riparian areas.	\$50,000	2019	NOSC	\$350-\$500k		SRFB PSAR BIA FWS
09032.1	Acquisition for Protection	Capital	Dungeness Drift Cell Conservation	Permanently conserve drift cell processes throughout 8.8 miles of coastal feeder bluffs in the Dungeness Drift Cell	Ecosystem links between upland and nearshore habitats. 2. Reduced sediment input from feeder bluffs to nearshore area, leading to A) transformation of the character of the beach, affecting the kinds of life the beach can support, and B) the degradation of the beach, resulting in loss of the shallow, nearshore migration corridors for salmonids that provide protection from predation.3. Permanent loss of habitat above +5 feet Mean Low-Low Water (MLLW), which represents the suitable habitat area for surf smelt and sand lance spawning. Puget Sound Salmon Recovery Plan (PSSRP), habitats and processes critical to support salmon recovery, "drift cell processes (including sediment supply, transport and deposition) that create and maintain nearshore habitat features such as spits, lagoons, bays and beaches" (page 368), PSSRP Dungeness Section, Key strategies and actions supporting the overall approach to recovery, "Nearshore habitat protection" (page 324).	WRIA 17 LFA, WRIA 18 LFA, Puget Sound Salmon Recovery Plan page 368 and 324.	Nearshore (5,200 acres total), especially eelgrass beds (363 acres) and salt marsh (161 acres)	Acquisition	Permanently conserve drift cell processes throughout 8.8 miles of coastal feeder bluffs in the Dungeness Drift Cell	Puget Sound Chinook, Hood Canal/Eastern Strait of Juan de Fuca summer chum, fall chum, pink, Coastal-Puget Sound bull trout	Puget Sound steelhead, coho	Bluff erosion measurement phase will be complete in early 2011					Conservation Plan	\$150,000	2014	JS/KT	\$7 million		SRFB, ESRP, National Coastal Wetlands Conservation

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09091	Restoration	Capital	Dungeness River Stream Flow Restoration-Irrigation Efficiencies	Through improvements in irrigation system efficiencies, Dungeness River water withdrawals will be reduced and stream flows will increase.	low instream flows	Draft WRIA 18 Dungeness/Elwha/Morse Steelhead Limiting Factors, the WRIA 18 LFA, the WRIA 18 Watershed Plan (Chapter on Water Quantity) & the Puget Sound Chinook Recovery Plan (Chapter 6: Regional Salmon Recovery Strategies)	Instream habitat, riparian	Instream Flow	Restore 0.5-5 cfs of stream flow	PS Chinook	Puget Sound steelhead, summer chum, Coho, fall chum, pink, bull trout	Preliminary design work completed, some cultural resources surveys completed						2015	CCD				
12098	Restoration	Capital	Dungeness River Stream Flow Restoration-Storage	Dungeness River high flows will be captured and stored in small reservoirs for late season irrigation or used for shallow aquifer recharge to ameliorate late summer and early fall low stream flows.	low instream flows	Draft WRIA 18 Dungeness/Elwha/Morse Steelhead Limiting Factors, the WRIA 18 LFA, the WRIA 18 Watershed Plan (Chapter on Water Quantity) & the Puget Sound Chinook Recovery Plan (Chapter 6: Regional Salmon Recovery Strategies), Aquifer Recharge Feasibility Study for the Dungeness Peninsula	Instream habitat, riparian	Instream Flow	Restore 0.5-5 cfs of stream flow	PS Chinook	Puget Sound steelhead, summer chum, Coho, fall chum, pink, bull trout	Feasibility study completed						2015	CCD, CC, WUA, WWT				

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09092 (Project #s 35 & 36 combined)	Restoration	Capital	Dungeness River Floodplain Restoration (replaces project 35 and 36 Corps dike setback)	Floodplain restoration through the setback or reconfiguration of dikes or armored banks (RM 0 to 10.7)	Alleviate channel constrictions and recover floodplain disconnected by dikes	NOPLE 2011 Draft Strategy Table C, WRIA 18 LFA p. 105, Puget Sound Recovery Plan-Dungeness p. 325.	floodplain	dike and armored bank removal and reconfiguration.	Seven floodplain restoration projects totaling roughly 2.4 river miles	Puget Sound Chinook, Puget Sound steelhead, summer chum, fall chum, pink, bull trout	coho	One project is completed (Rivers End), another is in design (Corps dike setback), a third is waiting funding (RR Bridge trestle). Ward Road reconfiguration, RR Bridge trestle replacement, Dungeness Meadows dike reconfiguration, Robinson side channel restoration, and upper Haller dike setback require communication with partners and the community	RR Bridge Trestle replacement design-only	\$100,000		Corps dike setback and channel restoration	\$10 million	2019	Jamestown S'Klallam Tribe/Clallam County/Army Corps	\$15 million		SRFB PSAR Corps	
09041.1	Restoration	Capital	Dungeness River - Meadowbrook Creek restoration (replace project 41)	Reconnect Meadowbrook Creek to the Dungeness River at the downstream send and relocate Meadowbrook Creek to its historic channel,	Tributary disconnected from the Dungeness River	NOPLE 2011 Draft Strategy Table C, Puget Sound Recovery Plan-Dungeness p. 325.	saltmarsh, tributary, mainstem	channel construction	restore tributary connection to 30 acres of saltmarsh and wetland and relocate 0.9 miles creek channel.	Puget Sound Chinook, Puget Sound steelhead, summer chum, fall chum, bull trout	coho	A hydrodynamic model of three alternatives is constructed. The site was extensively surveyed. A conceptual design is complete. The two culverts were pulled in August 2009.	Engineer design, bid contract, complete permitting see 2013		Construct project	\$200,000		2013	NOSC, CCD, JS/KT	\$300,000		SRFB, PSAR	

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09040	Restoration	Capital	Cassalery Creek Instream Flow Enhancement Project	This project will add 0.1 to 0.2 CFS Class "A" Reclaimed Water into Cassalery Creek.	Insufficient instream flow & Riparian area degradation	Clallam County State of the Streams (page 94, Greater Dungeness Watershed Study) & Draft WRIA 18 Dungeness/Elwha/Morse Steelhead Limiting Factors, the WRIA 18 LFA (p. 82 of WRIA 18 LFA), the WRIA 18 LFA (p. 82), the WRIA 18 Watershed Plan (Chapter on Water Quantity) & the Puget Sound Chinook Recovery Plan (Chapter 6: Regional Salmon Recovery Strategies).	Riparian	Instream Flow	Adds 0.1 to 0.2 CFS to Instream Flow	Fall Chum	Winter Steelhead, Cutthroat, Coho, and possibly Bull Trout	Design completed	Permitting & Riparian area clean-up	\$7,500	Construction	\$92,500			2011	SWD	\$100,000	\$15,000	unknown
10077	Restoration	Capital	Grays Marsh and Gierin Creek	Project Design and Feasibility Study to: Restore and enhance salt marsh connectivity and enhancement of Gierin Creek	Saltwater Estuary, LWD, Side Channel, riparian	WRIA 18 Limiting Factors Analysis	Estuary river delta and riparian	Instream, Riparian	50 ac riparian 5,300 ft edge, 50 ac off-channel, 10 log jams	Chinook, Chum, Coho Salmon, and Steelhead	Cutthroat and bull trout	This will be Phase 1: Conceptual, Feasibility and 30% design	NA	\$0	Conceptual, Feasibility	60-100K	Construction	n/a	2012	WDFW	\$100,000		SRFB; ESRP and or PSAR
09046	Acquisition for Protection	Capital	Washington Harbor Habitat Protection Project	Maintain expansive and important Nearshore habitat for numerous salmonid populations and forage fish in the 118-acre estuarine system at the mouth of Bell Creek and adjacent to the entrance to Sequim Bay.	Protection of estuaries, critical for production of prey organisms for juvenile out-migrant, juvenile salmonid rearing, and returning adults; and critical rearing and transitional habitat.	WRIA 18 LFA	Nearshore, Estuary	Land Acquisition project for protection of estuarine and Nearshore habitat	Protect 118 acre estuarine system	Hood Canal/Eastern Strait of Juan de Fuca summer chum	Bull trout, Puget Sound steelhead & Chinook	Conceptual	Planning and Outreach to landowners	\$10,000	Planning and Outreach to landowners	\$10,000	Implementation - Conservation Easement Acquisition, and Fee Simple	\$1,000,000	2012	NOLT & JSKT	\$1,020,000	\$153,000	SRFB

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09047.1	Restoration	Capital	WA Harbor Restoration	WA Harbor is crossed by a 1,300-foot long road, equipped with just two 6-foot culverts, which disrupts habitat connectivity, tidal hydrology and habitat forming processes in the estuary's northern 37 acres. The project will provide unrestricted fish access and restore tidal hydrology and habitat forming processes in these 37 acres by removing the 6-foot culverts and 600 feet of road and replacing them with a 600-foot bridge.	Pocket estuary habitat, fish passage, tidal hydrology	WRIA 18 LFA	Estuary	Fish passage, tidal hydrology restoration, habitat forming processes restoration	Restore fish passage to 37 acres, restore tidal hydrology and habitat forming processes to 118 acres.	Hood Canal/Eastern Strait of Juan de Fuca summer chum, Puget Sound Chinook, Coastal/Puget Sound bull trout	Coho, pinks, fall chum, Puget Sound steelhead, cutthroat.	80% Design completed, cultural resources assessment completed, permitting underway.			Geomorphic assessment, cultural resources assessment, project design, permitting.	\$116,000	Remove existing culverts and 600' of road. Construct 600-foot bridge.	\$1,629,288	12/31/2012	Jamestown S'Klallam Tribe			
09093 (Project #s 45 & 37 combined)	Acquisition for Protection	Capital	North Sequim Bay Drift Cell Conservation Project	Permanent protection will be provided for Gibson, South, Travis and Paradise Cove Spits, all clustered near the entrances to WA Harbor and Sequim Bay, along with the 5.2 miles of coastal feeder bluffs that support the spits. Protection will be accomplished using conservation easements, property purchases, and state land management planning. Protected habitat includes 5.2 miles of feeder bluff shoreline, 23,560 feet of spit shoreline, 269 acres of marine shallow water and estuarine habitat, and the productive 10-mile shoreline of the 3,200-acre Sequim Bay.	1) ecosystem links between upland and nearshore habitats, 2) reduced sediment input from feeder bluffs to nearshore area causes degradation of the beach, resulting in loss of the shallow, nearshore migration corridors and eventual loss of the spits themselves, 3) loss of riparian vegetation that provides shade to the upper beach.	WRIA 17 and 18 LFA's	Barrier estuary, estuarine delta, nearshore		5.2 Miles of feeder bluff shoreline, 23,560 feet of spit shoreline	Hood Canal/Eastern Strait of Juan de Fuca summer chum, Coastal-Puget Sound bull trout, Puget Sound Chinook, pink, and fall chum salmon.	Puget Sound steelhead, coho.	Phase 1 is ready to begin. Phases 1-3 could be combined into a design-only project.				\$390,000	Phase 1, 2, and 3 combined as a design-only project		JS/KT	\$5,000,000		SRFB, ESRP	

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12099	Acquisition for Restoration	Capital	Johnson Creek Riparian Protection and Restoration	Acquire and conduct restoration projects on intact riparian corridor above SR 101	Establish riparian corridor protection; address mass wasting potential and implement instream fish habitat enhancement project.	WRIA 17 LFA pg 212-215.	instream and riparian	large wood recovery, sediment reduction, and riparian protection	Acquire and restore degraded riparian areas and instream habitat conditions above SR 101	ESA winter steelhead, and coho	Sea-run cutthroat trout and resident trout	Conceptual	Phase I acquisition and restoration	1,180,000				2014	NOLT/JSKT	\$1,180,000	DNR wood donations/match; and Rocky Mountain Elk Foundation grant	SRFB and RMEF	
09044	Acquisition for Protection	Capital	Jimmycomelately Riparian Protection	Purchase a ¼-mile length of riparian forest along Jimmycomelately (JCL) Creek (conservation easement or fee-simple).	Riparian habitat, LWD	Summer Chum Salmon Recovery Plan pages 85, 99.	Riparian	Acquisition	0.75 Miles of riparian corridor, approximately 72 acres.	HC/ESJDF summer chum, Coho, PS steelhead	Cutthroat	Conceptual	Appraisal/ review/ title report/ negotiations/purchase	\$1,000,000				2010	NOLT & JSKT	\$1,000,000	\$150,000	SRFB	
11094	Restoration	Yes	Chicken Coop Rd. Culvert Replacement	Replace total fish-barrier culvert with fish passable culvert	Habitat - Access and Passage	Salmon and Steelhead Limiting Factors, WRIA 17 (2002) Sequim Bay Subbbasin	Riparian	Fish Passage	Allow fish access to 7,500 linear feet of stream	Coho	Winter Steelhead	Conceptual	Entire project	\$75,000	N/a	N/a	N/a	N/a	9/15/2011	Clallam County	\$75,000	50% from Clallam County Public Works	Salmon Community Fund
09050.1	Assessment	Non-Capital	Clallam County Culvert Inventory	Identify road crossings, evaluate stream habitats and fish passage conditions	Identify and prioritize fish passage barriers by watershed	Limiting Factors Assessments for WRIA 17-19	in stream/floodplain	fish passage	restore access to an unknown amount of historic habitat	coho	chinook, chum, steelhead	conceptual						2014	LEKT/Clallam County	300,000-450,000	15%		

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<b>Non-Capital Programs</b>																							
<b>Hatchery</b>																							
09048	Non-Capital Programs	Plan Implementation & Coordination	Elwha River Native Steelhead Brood Development Project	Produce a new hatchery-origin winter steelhead population based upon the existing natural-origin winter steelhead stock in the Elwha River	Hatchery Practices	Elwha River Fish Restoration Plan; HSRG Eastern Straits Review	Hatchery Reform	Manage hatcheries for recovery through capital improvements	Establish a new hatchery-based winter steelhead population	Winter Steelhead		Ready to implement	Fish Production & Broodstock Development	\$150,000	Fish Production & Broodstock Development	\$150,000	Fish Production & Broodstock Development	\$150,000	On-going	LEKT	\$450,000	\$67,500	BIA
11095	Hatchery	Non-Capital	Maintenance of Elwha River Fish Populations During Removal of the Elwha River Dams	In order to protect native fish populations during dam removal, two hatcheries on the river (WDFW Elwha Rearing Channel and the Elwha Tribal Hatchery) will be utilized as safe refuges. Chinook, coho, steelhead, chum, and pink salmon will all rely to some extent on hatchery supplementation.	supplement productivity	Elwha Fish Restoration Plan (Ward et al, 2008)	In-Stream Water Quality	Hatchery Supplementation	Maintain ESA listed Chinook and Steelhead as well as coho, chum and pink salmon during Elwha Dam Removal	Chinook, Coho, pink, chum	Steelhead (covered under separate proposal)	Construction completed and strategy is developed and peer reviewed.	fish propagation	\$200,000	fish propagation	\$200,000	fish propagation	\$200,000	2021	LEKT and WDFW	\$600,000 for 3-years	WDFW and LEKT contributions of ~ \$900,000/year	WDFW base, LEKT federal tribal hatchery funding
<b>Harvest</b>																							
<b>Hydropower</b>																							
<b>Other</b>																							

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<b>Harvest Management Support</b>														\$9,157,500		\$13,148,500		\$13,004,288				\$52,430,000	\$3,735,502	
09064	Harvest Management Support	Non-Capital	Dungeness Improved Fisheries Enforcement	Enforcement is under-staffed. Two additional officers are needed for effective enforcement of enclosures, and to ensure orderly fisheries.	Illegal harvest of already small populations of Dungeness Chinook	Puget Sound Chinook Recovery Plan	Chinook-bearing streams	illegal harvesting	Protection of the Dungeness Chinook populations	Dungeness Chinook	Coho, steelhead, chum, pink,	Ready to implement	2 FTE's	\$200,000	2 FTE's	\$200,000	2 FTE's	\$200,000	On-going	WDFW & JSKT	\$600,000	\$90,000	SRFB, PSAR	
<b>Future Habitat Project Development</b>																								
09054	Future Habitat Project Development	Non-Capital	Elwha Conservation Planning	Create a plan based on Elwha Fish Recovery Plan's recommendation to develop a long term strategy for purchase or development of conservation easements on floodplain & estuary property outside of ONP	Habitat degradation and loss, floodplain modification, fish access (dams), channel conditions, riparian condition, water quality, biological processes, estuarine processes	Elwha Fish Recover Plan, 75-82, Habitat Limiting Factors for WRIA 18 154-161	Riparian	Instream flow, sediment reduction	Report that contains a list of prioritized parcels and landowner willingness for conservation easements or acquisition	PS Summer Chinook	Summer and Fall Chum, Upper and Lower Pink, Summer and Winter Steelhead, Cutthroat Trout, Dolly Varden, Bull Trout	Feasibility completed	GIS, Develop a system for prioritization, landowner outreach	\$19,500	Preliminary Appraisals, Title Review, Landowner willingness forms	\$47,500	Report	\$2,000	2012	NOLT, LEKT & CC	\$69,000	\$13,500	Makah & CC	

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09055	Future Habitat Project Development	Non-capital	The Elwha Nearshore Action Plan	The Elwha Nearshore action plan: Understanding, protecting, and restoring the Elwha Nearshore (Freshwater Bay to Ediz Hook, central Strait of Juan De Fuca, Olympic Peninsula, Washington).	Need for a plan to restore the Elwha Nearshore	WRIA 18 LFA, Hood Canal/Eastern Strait of Juan de Fuca Summer Chum Recovery plan	Nearshore	Nearshore Action Plan	20 linear km of Nearshore & 90 acres of estuary habitat	ESA-listed Puget Sound & Columbia River Chinook	bull trout, steel head & summer chum	Conceptual	restoration priority catalog, land owner actions & inventory	\$150,000	Coordinate with landowners for protection strategies of acquisition & easement	\$150,000	Continue coordinate with landowners for protection strategies of acquisition & easement	\$150,000	2012	CC & WDFW	\$650,000	\$50,000	EPA or others
09059	Future Habitat Project Development	Non-Capital	Port Angeles Harbor Basin Program	Bringing the stakeholders together to discuss the future of the Port Angeles Harbor Basin.	Degraded Nearshore and estuarine conditions and loss of associated habitat; Degraded water quality and temperature;	Chapter 2.11 STRAIT OF JUAN DE FUCA MARINE NEARSHORE ENVIRONMENT in the Elwha-Dungeness Watershed Plan Water Resource Inventory Area 18 (WRIA 18) and Sequim Bay in West WRIA 17 ; The WRIA 18 LFA; and The Puget Sound Chinook Recovery Plan, Chapter 3 - Habitat Factors Affecting Puget Sound Chinook Salmon and Bull Trout	Nearshore	Marine shoreline projects	A unified vision for the restoration of the PA Harbor Basin	Puget Sound Chinook	Hood Canal Strait of Juan de Fuca Summer Chum	Conceptual	Hiring a facilitator, and hosting visioning / planning meetings	\$20,000	Hiring a facilitator, and hosting visioning / planning meetings	\$20,000	Hosting meetings & write report	\$20,000	2012	NOPLÉ & MIRC	\$60,000	\$9,000	SRFB, PSAR

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09063.1	Future Habitat Project Development	non-capital	Dungeness River Habitat Resurvey (formerly project 63)	Resurvey in-river habitat conditions from the mouth to Klink Bridge (RM 11.7). Combine this survey with a Forest Service to compare channel conditions to the 1993 habitat survey	Pools, spawning gravel, high flow refugia	NOPLÉ 2011 Draft Strategy Table C, Puget Sound Recovery Plan-Dungeness p. 325.	in-river	habitat survey	resurvey 12 miles of mainstem habitat, compare results for entire watershed habitat survey with 1993 survey. Use to site restoration and protection projects	Puget Sound Chinook, Puget Sound steelhead, summer chum, fall chum, bull trout	coho	forest service survey in process, to be completed 2011.	habitat survey	\$50,000	analysis	\$15,000		2013	Jamesstown S'Klallam Tribe, US Forest Service, Tetra Tech			SRFB	
09067	Future Habitat Project Development	Non-Capital	Increase Recovery Capacity & Support NOPLÉ-wide	Quicken the pace of recovery by diversifying funding, assisting with project design and implementation & coordinating with recovery organizations.	Recovery implementation hindered by lack of capacity & lack of funding	Recovery Plan goals	Riparian, estuary, river delta, Nearshore	Instream flow, fish passage	Increased projects developed & new funding gained	All ESA Salmon species	All other salmon species	Work underway	Maintain increased staffing which will allow us to begin more projects & gain new funding for such	\$50,000	Maintain increased staffing which will allow us to begin more projects & gain new funding for such	\$50,000	Maintain increased staffing which will allow us to begin more projects & gain new funding for such	\$50,000	On-going	NOPLÉ	\$150,000	\$22,500	PSAR, SRFB
<b>Habitat Protection</b>																							

NOPLE for Salmon: 3-Year Work Plan **2013**

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09049	Habitat Protection	Non-Capital	Create Stable-funded Incentive program	Non-regulatory riparian habitat protection program, with sufficient funding, could protect a lot of high quality fish habitat and help to support ecosystem function.	Funding limitations	Recovery Plans & LFA	Funding limitations	Riparian Habitat Protection	Sufficiently fund a non-regularly incentive program for riparian habitat protection	All ESA listed salmonids	All other salmonids	Implementation	Implementation	\$100,000	Implementation	\$100,000	Implementation	\$100,000	On-going	CC & CCD	\$300,000	\$150,000	CC
09052	Habitat Protection	Non-Capital	Clallam County Map Roadside Ditches	Assess quantity and quality of stormwater from roadside ditches to stream channels. Baseline for stormwater quality monitoring.	Degraded water quality	Recovery Plans & LFA	stream network	water quality	Assess stormwater quality and the effect of roadside ditches. Develop a baseline for stormwater quality monitoring.	All ESA Salmon species	All other salmon species	Conceptual	Identify crossing and ditches on maps	\$100,000	Ground truthing and water quality monitoring	\$30,000	water quality monitoring and develop report	\$30,000	2012	CC	\$75,000	\$11,250	SRFB, PSAR
09053	Habitat Protection	Non-Capital	Clallam Watertype Inventory and Assessment	Correct and update the water type maps, which has many errors, and could result in under-protection of 40-60% of the fish-bearing streams, if not corrected.	Improves local gov't information sources for the protection of critical areas under the GMA.	Recovery Plans & LFA	Instream Riparian	Correction of maps	Elimination of errors in the WDNR water type maps	All ESA Salmon species	All other salmon species	Conceptual			project scoping, landowner contacts, fieldwork, data collection	\$120,000	Assessment, field work, data entry, interactive mapping	\$200,000	2012	WFC	\$370,000	\$75,000	SRFB, PSAR
09069	Habitat Protection	Non-Capital	NOPLE area wide data base for habitat restoration, protection & permitted activities	Work w/nearby govts to integrate GIS & Permit Tracking to understand and monitor landscape-scale development patterns within LE	All- H Integration	Recovery Plans & LFA	Monitoring	Monitoring	Design, Purchase & Populate data base, followed by analysis	All ESA Salmon species	All other salmon species	Conceptual	Purchase & Install	\$100,000	Populate data base, followed by analysis	\$100,000	Continue to add new info to data base	\$15,000	insertion of new data will be on-going NOPL, CC, COPA & COS	\$200,000	\$39,750	PSAR/Other	

# NOPLE for Salmon: 3-Year Work Plan 2013

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09070	Habitat Protection	Non-Capital	Assess implementation of CAO, SMP & HPA ordinance.	Ground truth survey to gauge effectiveness of regulations designed to protect habitat.	Advance All-H Integration	Recovery Plans & LFA	Monitoring	Monitoring	Survey, info integrated into data base, analysis	All ESA Salmon species	All other salmon species	Conceptual			All	\$100,000		2012	NOPLE, CC, COPA & COS	\$100,000	\$15,000	PSAR/Other	
09071	Habitat Protection	Non-Capital	NOPLE Area Wide Increase compliance with ordinances & codes	Help increase compliance through active enforcement & inspection at all stages of development.	Advance All-H Integration	Recovery Plans & LFA	Monitoring	Monitoring	Resources to provide increased compliance and move to proactive enforcement.	All ESA Salmon species	All other salmon species	Conceptual		Increased & proactive enforcement	\$200,000	Continue increased & proactive enforcement	\$200,000	On-going	NOPLE, CC, COPA & COS	\$200,000	\$20,000	Unknown	
09072	Habitat Protection	Non-Capital	NOPLE area wide update stormwater management program	Support efforts by Clallam Co. & City of PA to reduce stormwater runoff.	Advance salmon recovery	Puget Sound Chinook Recovery Plan, Clean Water Act	Instream Habitat & Riparian	Instream flow, fish passage	implement comprehensive stormwater management system	All ESA Salmon species	All other salmon species	Feasibility	Monitoring of the Sequim-Dungeness area		Monitoring all of Clallam County and convening a stakeholder group		Development of Stormwater Management Plan		NOPLE, CC, COPA & COS	\$719,000	\$538,000	EPA	
09073	Habitat Protection	Non-Capital	NOPLE Area Wide update Shoreline Master Program (SMP)	Support efforts by Clallam County & City of PA which are mandated by WA to update SMP's by 2011.	Advance salmon recovery	Puget Sound Chinook Recovery Plan	Instream Habitat, Nearshore & Riparian	Sediment Reduction	Update Shoreline Master Plans	All ESA Salmon species	All other salmon species	Conceptual	Obtain funding & begin SMP process	\$300,000	Continue work & process to update SMP	\$300,000	SMP update completed		2012	NOPLE, CC, COPA & COS	\$600,000	\$90,000	DOE

# NOPLE for Salmon: 3-Year Work Plan 2013

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<b>Watershed Plan Implementation &amp; Coordination</b>																							
09057.1	Monitoring	non-capital	Elwha Watershed Adaptive Management Plan & Monitoring	Conduct fish enumeration activities at multiple spatial and temporal locations in Elwha watershed following dam removal in 2014	Evaluate fish response to dam removal and provide feedback for project managers for adaptive management process	Elwha Fisheries Restoration Plan (Ward et al. 2008)	watershed	Fish abundance, productivity, diversity, spatial structure	Conduct adult and juvenile counts using multiple methods	all species	all species							2014	LEKT/NOAA/USGS/U SFWS/WDFW	300,000-400,000/year	15%		
09066.1	Implementation & Coordination	Non-Capital	12 River Channel Migration Zone Assessment	CMZ mapping and delineation, and incorporation of those maps into the Critical Areas Ordinance. Clallam County has jurisdiction and authority to limit development within CMZs through the Critical Areas Ordinance.	CMZ's are also the most productive salmonid habitat, so delineation will help protect.	Clallam County Critical Areas Ordinance	CMZs	CMZ mapping and delineation	CMZ delineation	All ESA listed salmonids	All other salmonids	Conceptual	project scope, consultant selection	\$50,000	CMZ Mapping and delineation	\$250,000			2011	JSKT, LEKT, Makah & CC	\$300,000	\$255,000	Unknown
<b>Outreach &amp; Education</b>																							
09051	Outreach & Education	Non-Capital	Clallam County Salmonid Outreach Planner	Develop a comprehensive and collaborative program for outreach, education, public involvement, and stewardship promotion.	Need a coordinated and consistent effort to communicate with citizens about salmonid ecology and recovery.		Capacity	Development of an outreach program	Increase public awareness of salmonid recovery efforts	All ESA listed salmonids	All other salmonids	Conceptual	Determine existing local efforts and ID potential linkages	\$66,600	Create links, close gaps	\$66,600	Project design and further recovery plan		On-going	CC & CCD	\$200,000	\$30,000	Unknown
09058	Outreach & Education	Non-Capital	Elwha Morse Management Team	Support and develop capacity for EMMT	Limited capacity		Capacity		Support and develop capacity for EMMT	All ESA listed salmonids	All other salmonids	Conceptual	Increase capacity	\$75,000	Project design / volunteer dev.	\$75,000	Implement Projects		On-going	CC	\$225,000	\$33,750	Unknown

NOPLE for Salmon: 3-Year Work Plan 2013

No.	Project Type	Plan Category	Project Name	Project Description (brief description)	Limiting Factors	Document Reference (Recovery Plan, Chapter 3 - Habitat Protection)	Habitat Type (HWS items - i.e. riparian, estuary river delta, Nearshore, etc.)	Activity Type (HWS items - i.e. fish passage, instream flow, sediment reduction, etc.)	Project Performance (restore 30 acres of floodplain)	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status	2014 Activity to be funded	2014 Estimated Cost	2015 Activity to be funded	2015 Estimated Cost	2016 Activity to be funded	2016 Estimated Cost	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)
09061	Outreach & Education	Non-Capital	WRIA-19 Watershed Council	Support and develop capacity for WRIA-19 Watershed Council.	Limited capacity	WRIA 19 SALMON RESTORATION PLAN	Capacity		Support and develop capacity for WRIA-19 Watershed Council.	All ESA listed salmonids	All other salmonids	Conceptual	Increase capacity	\$75,000	Project design / volunteer dev.	\$75,000	Implement Projects	\$75,000	On-going	CC	\$225,000	\$33,750	Unknown
09062	Outreach & Education	Non-Capital	Dungeness River Management Team	Support and develop capacity for the DRMT	Limited capacity		Capacity		Support and develop capacity for the DRMT	All ESA listed salmonids	All other salmonids	Conceptual	Increase capacity	\$75,000	Project design / volunteer dev.	\$75,000	Implement Projects	\$75,000	On-going	CC	\$225,000	\$33,750	Unknown
09068	Outreach & Education	Non-Capital	NOPLE-Area Wide Outreach Program	Variety of efforts to inform and educate about the need for salmon recovery, local projects underway, and call to action about what individuals can do.	Need for an outreach program	Puget Sound Partnership Action Agenda	Development of an outreach program	Development of an outreach program	Development of an outreach program	All ESA listed salmonids	All other salmonids	Conceptual	Develop and implement outreach plan	\$30,000	Update website and outreach displays	\$30,000	Expand and Continue Outreach	\$25,000	On-going	NOPLE & WDEW	\$85,000	\$12,750	Unknown
<b>Stock Monitoring Support</b>																							
09056	Stock Monitoring Support	Non-Capital	Elwha River Nearshore Biodiversity Investigations	Assess the current status of salmon and associated fish in the Nearshore adjacent to the Elwha River, characterization of habitat	Filling a data gap in the region	Technical Workshop on Nearshore Restoration in the Central Strait of Juan de Fuca	Nearshore	Biodiversity assessment	Development of pre dam removal and post dam removal databases for fish communities in the Central Strait. Identification of food web relationships, mapping of habitats.	PS Chinook	Coho, chum, steelhead, smelt, sand lance, herring, rockfish,	Ready to implement	Nearshore biodiversity Investigations	\$75,000	Nearshore biodiversity Investigations	\$75,000	Nearshore biodiversity Investigations	\$75,000	2015	NOAA, USGS & LEKT	\$450,000	\$67,500	LEKT, JSKT, Batelle

No.	Project Type	Plan Category	Project Name	Project Description (brief description)	Limiting Factors	Document Reference for limiting factor (Recovery Plan, Chapter 3 - Habitat Protection)	Habitat Type (HWS items - i.e. riparian, estuary river delta, Nearshore, etc.)	Activity Type (HWS items - i.e. fish passage, instream flow, sediment reduction, etc.)	Project Performance (restore 30 acres of floodplain)	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status	2014 Activity to be funded	2014 Estimated Cost	2015 Activity to be funded	2015 Estimated Cost	2016 Activity to be funded	2016 Estimated Cost	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)
09076	Stock Monitoring Support	Non-Capital	Elwha River Salmon Enumeration Weir	Construct, install and maintain a floating weir in the Elwha River to allow the accurate enumeration of returning adult salmon to the Elwha River	Filling a data gap in the region - monitoring the effects of ecosystem restoration	Elwha River Fish Restoration Plan	Mainstem Elwha River	Enumeration of returning adult salmon	Count all adult salmon returning to Elwha River	PS Chinook	Coho, steelhead, chum, pink,	Being implemented for one year but operational funding needed to continue.		\$305,000	Maintenance and operation	\$305,000			2011	USFWS, NOAA, WDFW, JSKT, NOLT & CC	\$610,000	\$210,000	USGS/NPS grant
<b>Habitat Project Monitoring</b>																							
09065	Habitat Project Monitoring	Non-Capital	Jimmycomelately Creek & Dungeness River Habitat	Stewardship funding for 300 acres conserved through conservation easements and acquisition	Protection from improper use, noxious weed control, general site maintenance, and monitoring of land use.	Recommended Land Protection Strategies for the Dungeness Riparian Area	Monitoring	Monitoring	Monitor and manage 300 acres of protected lands - salmonid habitat	Dungeness Chinook	all other salmonid species	Conceptual	Staff (0.17 FTE), mileage, supplies, equipment	\$17,200	Staff (0.17 FTE), mileage, supplies, equipment	\$17,200	Staff (0.17 FTE), mileage, supplies, equipment	\$17,200	On-going	WDFW, JSKT, NOLT & CC	\$51,600	\$7,740	SRFB, PSAR
09074	Habitat Project Monitoring	Non-Capital	NOPLE Area Adaptive Management Plan & Monitoring	LE will participate in group process needed to create an adaptive management plan	Lack of H integration	Recovery Plans & LE Statute	Monitoring	Monitoring	Participate & complete adaptive management process & plan	All ESA Salmon species	All other salmon species	Conceptual	Provide Further education about	\$1,000	Begin Adaptive Management Process	\$75,000	Continue & Complete Adaptive Mgmt Process & Plan	\$75,000	2012	NOPLE, CC, COPA & COS	\$165,000	\$15,000	In-kind/other
09075	Habitat Project Monitoring	Non-Capital	NOPLE Area wide Monitoring Program	Establish monitoring program for VSP parameters & provide for data/findings for EDT/AHA	Need for a monitoring program	Puget Sound Chinook Recovery Plan	Monitoring	Monitoring	Begin w/Dungeness Chinook population analysis and modeling to support harvest, hatchery & habitat mgmt & planning	Dungeness Chinook	Coho, steelhead, chum, pink,	Conceptual	Design & Establish population analysis & modeling	\$100,000	Data Collection & Analysis	\$100,000	More Data collection & Analysis	\$100,000	2012	NOPLE, CC, COPA & COS	\$300,000	\$45,000	Unknown

No.	Project Type	Plan Category	Project Name	Project Description (brief description)	Limiting Factors	Document Reference for limiting factor (Recovery Plan, Chapter 3 - Habitat Protection)	Habitat Type (HWS items - i.e. riparian, estuary, river delta, Nearshore, etc.)	Activity Type (HWS items - i.e. fish passage, instream flow, sediment reduction, etc.)	Project Performance (restore 30 acres of floodplain)	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status	2014 Activity to be funded	2014 Estimated Cost	2015 Activity to be funded	2015 Estimated Cost	2016 Activity to be funded	2016 Estimated Cost	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)
Research																							
Other																							
														\$20,274,300		\$28,873,300		\$27,559,376		\$111,789,600	\$16,768,440		
<b>Priority Projects and Programs Benefiting Non-Listed Species</b>																							
<b>Total Non-Listed Species Need:</b>																							

## North Olympic Peninsula Lead Entity for Salmon 2013

Date:

14-Jan-13

### Work Book for Ranking Work Plan Narratives

**Work Book Constructed by:**

WH Pearson 17-Jan-11

Peapod Research

for

North Olympic Peninsula Lead Entity

**Data Entered by:** 1/22/2013

Lara Kawal

North Olympic Peninsula Lead Entity

**Review and Normalization by:** 1/22/2013

Lara Kawal

North Olympic Peninsula Lead Entity

## NOPLE 2013 Scoring Work Plan Narratives

Date:

14-Jan-13

### List of Work Plan Narratives 2013

Category is either Capital or  
NON Capital (Non)

ID	Title	Sponsor	Category	Weighted Mean Score	Normalized Score	Max Score Capital
<b>NEW PROJECTS</b>						164.85
<b>13101</b>	Hoko River Remeander Engineering Feasibility Design	NOSC, LEKT, Makah	Capital	100.57	<b>0.610</b>	
<b>13102</b>	Little River LWD	LEKT	Capital	121.61	<b>0.738</b>	
<b>13103</b>	Ediz Hook Beach Restoration Phase 3	LEKT, WDNR, City of Port Angeles	Capital	110.69	<b>0.671</b>	
<b>13104</b>	Three Crabs Nearshore and Estuarine Restoration	NOSC	Capital	129.63	<b>0.786</b>	
<b>UPDATED PROJECTS</b>						
<b>09086.1</b>	Pysht Floodplain Acquisition and Restoration	NOLT, Makah, LEKT, WDOT, Mike Haggerty	Capital	106.45	<b>0.646</b>	
<b>10080.1</b>	Lyre River Estuary Protection and Restoration	NOLT	Capital	116.38	<b>0.706</b>	
<b>09039.2</b>	McDonald Creek Barrier Removal and Channel Restoration	Jamestown S'Klallam Tribe, WDFW, WSDOT, Agnew Ditch Co.	Capital	104.78	<b>0.636</b>	

# NOPLE 2013 Ranking Work Plan Narratives

Date:

7-Jan-13

## Final Watershed Priorities Sorted by Normalized Score

WRIA	System	Normalized Score (1 to 5)	WRIA	System	Normalized Score (1 to 5)
18	Elwha River	5.00	19	Butler Creek (19.0112)	1.59
18	Dungeness River	4.76	19	Field Creek	1.59
17	Nearshore	4.27	19	Joe Creek	1.46
18	Nearshore	4.27	19	Murdock Creek	1.46
19	Nearshore	4.02	18	Bell Creek	1.34
18	Morse Creek	3.90	18	Bagley Creek	1.34
19	Lyre River	3.05	18	Dry Creek	1.34
19	Hoko River	2.93	17	Chicken Coop Creek	1.22
19	Pysht River	2.93	17	Dean Creek	1.22
19	Clallam River	2.80	17	Johnson Creek	1.22
19	Salt Creek	2.80	18	18.0017 (Cooper Creek)	1.22
19	Sekiu River	2.68	19	Olsen Creek	1.22
17	Jimmycomelately Creek	2.56	18	Cassalery Creek	0.98
18	Ennis Creek	2.56	18	Gierin Creek	0.98
18	McDonald Creek	2.32	17	17.0277	0.73
18	Siebert Creek	2.20	17	17.0284	0.73
19	Deep Creek	2.20	17	17.0295	0.73
19	East Twin River	2.20	17	17.0296	0.73
19	West Twin River	2.20	17	17.0297	0.73
19	Jim Creek	1.83	17	17.0300	0.73
19	Sail River	1.71	18	18.0159	0.73
19	Whiskey Creek	1.71	18	Agnew Creek (18.0172)	0.73
18	Lees Creek	1.59	19	Falls Creek	0.73
18	Meadowbrook Creek	1.59	19	19.0005	0.00
18	Peabody Creek	1.59	19	19.0006	0.00
18	Tumwater Creek	1.59	19	19.0018	0.00
18	Valley Creek	1.59	19	19.0019	0.00
19	Colville Creek	1.59	19	19.0080	0.00
19	Bullman Creek	1.59	19	19.0081	0.00

**NOPLE 2013 Ranking Work Plan Narratives**

NS = No Score Given

Date:

Capital Project

CV = Coefficient of Variation (Standard deviation/Mean as %)

**MAXIMUM POSSIBLE SCORE 164.85**

2013

ID	Criteria for Ranking	Score 0 to 5 with 5 being best														Mean Score	Weight	Weighted Mean Score	CV (%)	
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12	Scorer 13	Scorer 14					
1	Watershed Priority	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	2.88	14.40	0.0
2	Addresses limiting factor	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	4.04	20.20	0.0
3	Addresses stock status and trends	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	2.56	12.80	0.0
4	<i>Benefits an ESA-listed stock</i>	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.33	16.65	0.0
5	Benefits other stocks	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.00	15.00	0.0
6	Protects high-quality fish habitat	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.82	19.10	0.0
7	Restores formerly productive habitat	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.88	19.40	0.0
8	Supports restoration and maintenance of ecosystem functions	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.67	18.35	0.0
9	<i>Spatial-Temporal Scale of Influence</i>	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.27	16.35	0.0
10	<i>Project Readiness</i>	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	2.52	12.60	0.0
	<b>Mean</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>5.00</b>	<b>Overall Weighted Score w/ Watershed</b>		<b>164.85</b>
	<b>CV (%)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Overall Weighted Score w/o Watershed</b>		<b>150.45</b>

## NOPLE 2013 Ranking Work Plan Narratives

### Criteria and Weights for Scoring and Ranking 2013 CAPITAL Projects

#### North Olympic Peninsula Lead Entity

*Final wording and weights from Fall 2010 Retreat. New or modified wording in BOLDFACE Italics*

**DATE:**

Jan. 14, 2013

**Criteria 1 through 10 inclusive are used to assess Work Plan Narratives for Capital Projects. All Criteria are used to assess Project Proposals for Current Year's funding.**

ID	Criteria for Ranking	Criteria Narrative	New Mean Weight
1	<b>Watershed Priority</b>	This criterion is based on data concerning historical and current productivity <i>and stock diversity</i> of the NOPLE watersheds. The data was presented and the priorities established in the development of the 2008 Strategy. Consideration of watershed priority is mandated by regulation. This score is added by Lead Entity staff for the watershed(s) covered by the proposed project.	<b>2.88</b>
2	<b>Addresses limiting factor</b>	This criterion pertains to the extent to which the proposed work would address the limiting factor(s) relevant to the watershed and stock. How well does the proposed work address the relevant limiting factors?	<b>4.04</b>
3	<b>Addresses stock status and trends</b>	This criterion derives directly from NOPLE's GOAL to achieve robust fish stocks and pertains to the extent to which the proposed work takes into account stock status and trends. Is the proposed work appropriate for the current status and trends of the stock(s) of interest?	<b>2.56</b>
4	<i>Benefits an ESA-listed stock</i>	<i>This criterion derives directly from NOPLE's GOAL to address ESA-listed stocks. To what extent does the proposed work benefit ESA-listed stock(s)?</i>	<b>3.33</b>
5	<b>Benefits other stocks</b>	<i>This criterion derives directly from NOPLE's long-standing principle that "All stocks need attention." To what extent to which the proposed work provide tangible benefit(s) to non-listed stock(s)?</i>	<b>3.00</b>

ID	Criteria for Ranking	Criteria Narrative	New Mean Weight
6	<b>Protects high-quality fish habitat</b>	This criterion derives directly from NOPLE's GOAL to protect and restore fish habitat. This criterion pertains to the extent to which the proposed work would protect high-quality fish habitat. A project with acquisitions, easements, or other instruments that protects habitat would score well here. How well does the proposed instrument protect high-quality salmon habitat? How critical or important is the habitat in question? <b><i>A restoration only project or an ecosystem only project would score zero.</i></b>	<b>3.82</b>
7	<b>Restores formerly productive habitat</b>	This criterion derives directly from NOPLE's GOAL to protect and restore fish habitat. This criterion pertains to the extent to which the proposed work restores formerly productive habitat. A project with active measures to restore habitat would score well here. To what extent does the proposed work restore formerly productive salmon habitat? <b><i>A protection only project or ecosystem only project would score zero.</i></b>	<b>3.88</b>
8	<b>Supports restoration and maintenance of ecosystem functions</b>	This criterion derived directly from NOPLE's GOAL to restore and maintain ecosystem function and this pertains acquisition, restoration and combination projects. This criterion pertains to the extent to which the proposed work restores ecosystem function(s). To what extent does the proposed work support restoration or recovery of ecosystem function(s)? A project that restores a number ecosystem processes would score well here.	<b>3.67</b>
9	<i>Spatial-Temporal Scale of Influence</i>	<b><i>This criterion addresses the scale in space and time over which the benefits of the project would extend. A project for which the benefits would extend over a region or watershed and for years to decades would score high. Projects of local extent or temporary duration would score lower.</i></b>	<b>3.27</b>
10	<i>Project Readiness</i>	<b><i>This criterion addresses how ready are projects to implement. A project that can be implemented within the current year should score high. A project that is several years away should score low.</i></b>	<b>2.52</b>
11	<b>Likelihood of success based proposer's past success in implementation</b>	This criterion is a standard one in project selection and management. What is the probability that the project sponsor will succeed with the proposed work given their previous experience and current expertise and capability with the type of work proposed?	<b>1.85</b>
12	<b>Likelihood of success based on approach</b>	This criterion is a standard one in project selection and management. Is the approach appropriate to the work proposed? What is the probability of success of the proposed approach?	<b>2.86</b>
13	<b>Reasonableness of cost and budget</b>	This criterion is a standard one in project selection and management. Do the scope of work, overall estimated cost, and budget align? Are the budget items and costs reasonable given the scope of work?	<b>2.17</b>

# North Olympic Peninsula Lead Entity for Salmon: 2013 Scoring Project Proposals

Date:

28-Feb-13

## Criteria and Weights for Scoring and Ranking 2013 NON-CAPITAL Projects

*Final wording and weights from Fall 2010 Retreat. New or modified wording in BOLDFACE Italics*

*New mean weight for each criteria from 1 to 5, with 5 being highest*

*Criteria 1 through 9 inclusive are used to assess Work Plan Narratives for NON-Capital Projects. All Criteria are used to assess Project Proposals for Current Year's funding.*

ID	Criteria for Ranking	Criteria Narrative	New MEAN Weight
1	<b>Advances robust harvestable stocks</b>	This criterion derives from NOPL's GOAL to achieve harvestable fish stocks. To what extent does the proposed work lead to progress towards harvestable fish stocks?	3.23
2	<b>Advances implementation of recovery plan(s)</b>	This criterion derives from NOPL's GOAL to implement recovery plans. To what extent does the proposed work lead to progress in the implementation of recovery plan(s)?	3.73
3	<b>Advances habitat protection and restoration</b>	This criterion derives from NOPL's GOAL to protect and restore salmon habitat. To what extent does the proposed work lead to progress in protecting and/or restoring salmon habitat?	4.05
4	<b>Advances recovery of ecosystem function</b>	This criterion derives from NOPL's GOAL to support recovery and restoration of ecosystem function. To what extent does the proposed work lead to progress in the recovery and restoration of ecosystem function(s)?	4.21

ID	Criteria for Ranking	Criteria Narrative	New MEAN Weight
5	<b>Advances ecosystem awareness</b>	This criterion derives from NOPLE's GOAL to instill ecosystem awareness. To what extent does the proposed work increase the ecosystem awareness and its application? To what extent does the proposed work address and overcome obstacles to awareness?	2.81
6	<b>Advances integration</b>	This criterion derives from NOPLE's objective of advancing the integrations of the four H's: Habitat, Harvest, Hatcheries, and Hydropower. To what extent does the proposed work acknowledge the influence of the other H's on the work and the potential influence of the work on the other H's?	2.05
7	<b>Fulfills requirements of external agencies</b>	This criterion derives from NOPLE's objective to network with other entities and agencies. To what extent does the proposed work recognize and coordinate with the efforts and requirements of agencies? To what extent does the proposed work contribute to the knowledge and databases at the regional and state levels?	1.71
8	<b>Advances multi-agency funding strategy</b>	This criterion derives from NOPLE's objective of diversifying the funding base. To what extent will the proposed work be eligible and competitive for Non-SRFB funding?	1.81
9	<b>Has large spatial-temporal scale of effects</b>	This criterion derives from NOPLE's objective to support non-capital projects that benefit salmon recovery on a NOPLE-wide or regional basis. To what extent does the proposed work aid salmon recovery to a broad degree in time and space?	3.38
10	<b>Likelihood of success based on proposer's past success in implementation</b>	This criterion is a standard one in project selection and management. What is the probability that the project sponsor will succeed with the proposed work given their previous experience and current expertise and capability with the type of work proposed?	1.92
11	<b>Likelihood of success based on approach</b>	This criterion is a standard one in project selection and management. Is the approach appropriate to the work proposed? What is the probability of success of the proposed approach?	3.10
12	<b>Reasonableness of cost and budget</b>	This criterion is a standard one in project selection and management. Do the scope of work, overall estimated cost, and budget align? Are the budget items and costs reasonable given the scope of work?	2.69

<b>NOPLE 2013 Ranking Work Plan Narratives</b>	Date:
	14-Jan-13

Enter Values in the Yellow Cells

**Capital Project 13101**

Hoko River Remeander  
Engineering Feasibility Design

**Overall Weighted Score**

100.57

NS = No Score Given

CV = Coefficient of Variation (Standard deviation/Mean as %)

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12				
1	Watershed Priority	4.02	NS	4.02	4.02	4.02	4.02	NS	4.02	NS	NS	NS	4.02	4.02	2.88	11.58	0.0
2	Addresses limiting factor	4	NS	3	4	4	4	NS	2.5	NS	NS	NS	4	3.64	4.04	14.72	15.9
3	Addresses stock status and trends	4	NS	2	4	5	4	NS	2.5	NS	NS	NS	2	3.36	2.56	8.59	32.5
4	<i>Benefits an ESA-listed stock</i>	0	NS	0	4	4	2	NS	0	NS	NS	NS	3	1.86	3.33	6.18	92.9
5	Benefits other stocks	5	NS	3	4.5	5	4	NS	0	NS	NS	NS	2	3.36	3.00	10.07	50.8
6	Protects high-quality fish habitat	0	NS	0	0	0	0	NS	0	NS	NS	NS	0	0.00	3.82	0.00	#DIV/0!
7	Restores formerly productive habitat	4	NS	3	5	5	5	NS	0	NS	NS	NS	4	3.71	3.88	14.41	44.9
8	Supports restoration and maintenance of ecosystem functions	4	NS	2	4	5	5	NS	3	NS	NS	NS	4	3.86	3.67	14.16	25.7
9	<i>Spatial-Temporal Scale of Influence</i>	4.5	NS	2	4	5	4	NS	2.5	NS	NS	NS	3	3.57	3.27	11.68	28.4
10	<i>Project Readiness</i>	5	NS	4	3	4	5	NS	2.5	NS	NS	NS	2	3.64	2.52	9.18	30.0

	Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12		Weighted Mean Score
<b>Mean Score of Individual Scorer</b>	3.45	NS	2.30	3.65	4.10	3.70	NS	1.70	NS	NS	NS	2.80	<b>Overall Weighted Score w/ Watershed</b>	<b>100.57</b>
<b>CV (%) within Individual Scores</b>	51.21	#####	58.55	35.74	35.24	40.17	#####	85.53	#####	#####	#####	44.64	<b>Overall Weighted Score w/o Watershed</b>	<b>88.99</b>
<b>Standard Deviations from the Average of the Mean Scores of Individuals</b>	0.438	#####	1.001	0.688	1.251	0.75	#####	1.751	#####	#####	#####	0.375		

Scorer ID	Comments
1	There are no ESA listed species, but this project clearly benefits species of concern and multiple species.
5	Hoko River Remeander Engineering Feasibility Study - Impressive addition to the 3-Year Work Plan; Attention to the lower portions of the Hoko and Lyre, particularly the estuaries, was very welcome.
8	Hoko River Remeander Engineering Feasibility Study - Although this could potentially lead to a great restoration effort, it is merely a feasibility assessment and thus scores low on most criteria. The project does not provide benefits to stocks, but it could be argued that it supports restoration and works toward addressing limiting factors. It would be more "ready" if its stakeholder technical team was identified, and if it was not modeled after an incomplete assessment project. The project would also likely score higher if it was clearly described as a phased effort with alternatives evaluated as opposed to a complete loss of recovery investment if this channel restoration is deemed unfeasible.
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	Estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

<b>NOPLE 2013 Ranking Work Plan Narratives</b>	Date:
	14-Jan-13

Enter Values in the Yellow Cells

**Capital Project  
13102**

Little River LWD

**Overall Weighted Score**

121.61

NS = No Score Given

CV = Coefficient of Variation (Standard deviation/Mean as %)

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12				
1	Watershed Priority	5.00	NS	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	2.88	14.40	0.0
2	Addresses limiting factor	5	NS	2	3.5	5	5	4	4	5	4	4	4	4.14	4.04	16.71	20.7
3	Addresses stock status and trends	4	NS	2	4	5	5	5	4.5	5	5	4	3	4.23	2.56	10.82	22.2
4	<i>Benefits an ESA-listed stock</i>	5	NS	3	4.5	5	5	4	4.5	5	4	4	3	4.27	3.33	14.23	16.8
5	Benefits other stocks	4.5	NS	2	3	5	5	3	4	5	4	3	2	3.68	3.00	11.05	29.7
6	Protects high-quality fish habitat	0	NS	0	0	0	0	0	0	0	2	4	0	0.55	3.82	2.08	226.1
7	Restores formerly productive habitat	4	NS	2	3.5	5	5	4	3.5	3	4	5	4	3.91	3.88	15.17	22.4
8	Supports restoration and maintenance of ecosystem functions	5	NS	1	3.5	5	5	4	5	4	4	5	4	4.14	3.67	15.18	27.3
9	<i>Spatial-Temporal Scale of Influence</i>	5	NS	1	4	4	5	3	3.5	4	3.5	4	3	3.64	3.27	11.89	28.8

ID	Criteria for Ranking	Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12	Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
10	<i>Project Readiness</i>	5	NS	2	4	4	5	5	4	4	4	4	3	4.00	2.52	10.08	21.3
	<b>Mean Score of Individual Scorer</b>	4.25	NS	2.00	3.50	4.30	4.50	3.70	3.80	4.00	3.95	4.20	3.10	<b>Overall Weighted Score w/ Watershed</b>		<b>121.61</b>	
	<b>CV (%) within Individual Scores</b>	34.6	#####	63.25	36.7	34.57	33.33	38.32	35.89	37.08	19.97	14.29	41.94	<b>Overall Weighted Score w/o Watershed</b>		<b>107.21</b>	
	<b>Standard Deviations from the Average of the Mean Scores of Individuals</b>	0.737	#####	2.61	0.379	0.811	1.109	0.081	0.068	0.365	0.291	0.663	0.974				

Scorer ID	Comments
1	In terms of scale of influence, this is a very impressive project. LWD implementation would build upon the large scale restoration project that is being undertaken with dam removals and associated projects, and this is one of the first areas available for recolonization by salmon.
5	Little River LWD - Impressive addition to the 3-Year Work Plan
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

<b>NOPLE 2013 Ranking Work Plan Narratives</b>	Date:
	14-Jan-13

Enter Values in the Yellow Cells

**Capital Project 13103**

Ediz Hook Beach Restoration Phase 3

**Overall Weighted Score**

110.69

NS = No Score Given

CV = Coefficient of Variation (Standard deviation/Mean as %)

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12				
1	Watershed Priority	4.27	NS	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	2.88	12.30	0.0
2	Addresses limiting factor	5	NS	2	4	5	3	3	4	4	3.5	4.5	3	3.73	4.04	15.06	23.8
3	Addresses stock status and trends	5	NS	2	3.5	3	3	3	3.5	5	3	4	2	3.36	2.56	8.61	28.4
4	<i>Benefits an ESA-listed stock</i>	3.5	NS	2	4	4	4	3	4	5	2	4	2	3.41	3.33	11.35	28.5
5	Benefits other stocks	4.5	NS	2	3.5	4	4	3	4	4	4	4	2	3.55	3.00	10.64	22.9
6	Protects high-quality fish habitat	0	NS	0	0	0	0	0	0	0	2	4	0	0.55	3.82	2.08	226.1
7	Restores formerly productive habitat	5	NS	2	4	4	5	3	4	4	3.5	4	3	3.77	3.88	14.64	22.2
8	Supports restoration and maintenance of ecosystem functions	5	NS	1	4	4	4	3	5	4	3.5	4	3	3.68	3.67	13.51	28.5
9	<i>Spatial-Temporal Scale of Influence</i>	5	NS	1	3.5	5	5	3	3.5	4	4	5	2	3.73	3.27	12.19	34.0
10	<i>Project Readiness</i>	5	NS	4	4	4	5	5	4	3	4	4	3	4.09	2.52	10.31	16.3

	Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12		Weighted Mean Score
<b>Mean Score of Individual Scorer</b>	4.23	NS	2.03	3.48	3.73	3.73	3.03	3.63	3.73	3.38	4.18	2.43	<b>Overall Weighted Score w/ Watershed</b>	<b>110.69</b>
<b>CV (%) within Individual Scores</b>	35.14	#####	60.71	34.14	36.32	38.25	39.93	35.07	36.32	22.83	7.607	43.86	<b>Overall Weighted Score w/o Watershed</b>	<b>98.39</b>
<b>Standard Deviations from the Average of the Mean Scores of Individuals</b>	1.253	#####	2.136	0.098	0.483	0.483	0.595	0.329	0.483	0.056	1.176	1.519		

Scorer ID	Comments
1	This is a very important project for the restoration of Port Angeles Harbor, and addresses a key limiting factor, degradation of the Hook, a natural sand spit.
5	Ediz Hook Beach Restoration Phase 3 - Impressive addition to the 3-Year Work Plan
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

<b>NOPLE 2013 Ranking Work Plan Narratives</b>	Date:
	14-Jan-13

Enter Values in the Yellow Cells

**Capital Project 13104**

Three Crabs Nearshore and Estuarine Restoration

Overall Weighted Score

129.63

NS = No Score Given

CV = Coefficient of Variation (Standard deviation/Mean as %)

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12				
1	Watershed Priority	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	NS	NS	4.76	4.76	4.76	2.88	13.70	0.0
2	Addresses limiting factor	4.5	4.8	3	4.5	5	5	4	4	NS	NS	4.5	4	4.33	4.04	17.49	13.3
3	Addresses stock status and trends	4	4.8	2	3.5	5	5	4	4	NS	NS	5	4	4.13	2.56	10.57	21.3
4	<i>Benefits an ESA-listed stock</i>	4	5	4	4	5	5	3	4	NS	NS	5	4	4.30	3.33	14.32	14.9
5	Benefits other stocks	5	5	3	4	4	5	5	4.5	NS	NS	3.5	3	4.20	3.00	12.60	18.6
6	Protects high-quality fish habitat	0	0	0	3	0	0	0	0	NS	NS	4	0	0.70	3.82	2.67	202.5
7	Restores formerly productive habitat	5	4.8	4	4	5	5	4	3.5	NS	NS	5	4	4.43	3.88	17.19	12.4
8	Supports restoration and maintenance of ecosystem functions	5	4.9	4	4	5	5	4	5	NS	NS	5	4	4.59	3.67	16.85	10.5
9	<i>Spatial-Temporal Scale of Influence</i>	5	4.8	3	4	5	5	3	3.5	NS	NS	5	4	4.23	3.27	13.83	18.9
10	<i>Project Readiness</i>	5	4.8	4	3	4	5	5	3.5	NS	NS	4	3	4.13	2.52	10.41	18.3

	Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12		Weighted Mean Score
<b>Mean Score of Individual Scorer</b>	4.23	4.37	3.18	3.88	4.28	4.48	3.68	3.68	NS	NS	4.58	3.48	<b>Overall Weighted Score w/ Watershed</b>	<b>129.63</b>
<b>CV (%) within Individual Scores</b>	34.55	33.39	40.79	13.94	34.54	33.37	38.01	36.01	#####	#####	11.48	36.19	<b>Overall Weighted Score w/o Watershed</b>	<b>115.93</b>
<b>Standard Deviations from the Average of the Mean Scores of Individuals</b>	0.551	0.864	1.8	0.233	0.663	1.111	0.681	0.681	#####	#####	1.335	1.129		

ID	Comments
1	This promotes salmon recovery, promotes ecosystem awareness, builds upon previous conservation and restoration efforts, and involves many partnerships. Projects that are so multi-faceted in their deliverables should be encouraged.
5	Three Crabs Nearshore and Estuarine Restoration - Impressive addition to the 3-Year Work Plan
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

<b>NOPLE 2013 Ranking Work Plan Narratives</b>	<b>Date:</b>
	14-Jan-13

Enter Values in the Yellow Cells

**Capital Project 09086.1**

Pysht Floodplain Acquisition and Restoration

**Overall Weighted Score**

**106.45**

NS = No Score Given

CV = Coefficient of Variation (Standard deviation/Mean as %)

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12				
1	Watershed Priority	NS	NS	2.93	2.93	2.93	2.93	2.93	NS	2.93	2.93	NS	2.93	2.93	2.88	8.43	0.0
2	Addresses limiting factor	NS	NS	2	3.5	5	5	4	NS	4	4	NS	4	3.94	4.04	15.91	22.4
3	Addresses stock status and trends	NS	NS	2	3.5	4	5	4	NS	4	3	NS	3	3.56	2.56	9.12	23.7
4	<i>Benefits an ESA-listed stock</i>	NS	NS	0	1	0	0	3	NS	2	1	NS	4	1.38	3.33	4.58	102.4
5	Benefits other stocks	NS	NS	2	3.5	5	5	5	NS	4	4	NS	3	3.94	3.00	11.81	25.7
6	Protects high-quality fish habitat	NS	NS	0	2	4	5	0	NS	0	3	NS	0	1.75	3.82	6.69	109.7
7	Restores formerly productive habitat	NS	NS	2	4	4	5	4	NS	4	4	NS	4	3.88	3.88	15.04	20.1
8	Supports restoration and maintenance of ecosystem functions	NS	NS	1	4	4	5	4	NS	4	4	NS	4	3.75	3.67	13.76	29.1
9	<i>Spatial-Temporal Scale of Influence</i>	NS	NS	1	4	3	5	3	NS	4	4	NS	3	3.38	3.27	11.04	32.9

ID	Criteria for Ranking	Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12	Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
10	<i>Project Readiness</i>	NS	NS	2	3	5	5	5	NS	4	4	NS	4	4.00	2.52	10.08	25.0
	<b>Mean Score of Individual Scorer</b>	NS	NS	1.49	3.14	3.69	4.29	3.49	NS	3.29	3.39	NS	3.19	<b>Overall Weighted Score w/ Watershed</b>		<b>106.45</b>	
	<b>CV (%) within Individual Scores</b>	#####	#####	60.98	29.43	38.5	36.31	39.02	#####	38.59	27.12	#####	36.57	<b>Overall Weighted Score w/o Watershed</b>		<b>98.02</b>	
	<b>Standard Deviations from the Average of the Mean Scores of Individuals</b>	#####	#####	2.35	0.142	0.594	1.397	0.326	#####	0.059	0.192	#####	0.075				

Scorer ID	Comments
1	NS
5	Pysht Floodplain Acquisition and Restoration - Impressive improvement
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

**NOPLE 2013 Ranking Work Plan Narratives**

Date:

14-Jan-13

Enter Values in the Yellow Cells

**Capital Project 10080.1**

Lyre River Estuary Protection and Restoration

**Overall Weighted Score**

116.38

NS = No Score Given

CV = Coefficient of Variation (Standard deviation/Mean as %)

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12				
1	Watershed Priority	NS	4.02	4.02	4.02	4.02	4.02	4.02	NS	4.02	4.02	NS	4.02	4.02	2.88	11.59	0.0
2	Addresses limiting factor	NS	4.7	2	4	4	4	4	NS	4	3.5	NS	3	3.69	4.04	14.90	19.9
3	Addresses stock status and trends	NS	4.8	2	4	4	3	3	NS	4	3	NS	3	3.42	2.56	8.76	23.1
4	<i>Benefits an ESA-listed stock</i>	NS	3.5	4	4	4	3	3	NS	3	2	NS	3	3.28	3.33	10.92	19.2
5	Benefits other stocks	NS	4.5	3	3.5	4	4	4	NS	4	3	NS	2	3.56	3.00	10.67	20.4
6	Protects high-quality fish habitat	NS	4.8	4	4	4	4	3	NS	5	4	NS	5	4.20	3.82	16.04	14.4
7	Restores formerly productive habitat	NS	0	0	1	3	1	1	NS	4	3	NS	2	1.67	3.88	6.47	80.0
8	Supports restoration and maintenance of ecosystem functions	NS	4.6	3	4	4	3	3	NS	4	3	NS	3	3.51	3.67	12.89	17.0
9	<i>Spatial-Temporal Scale of Influence</i>	NS	4.8	3	4	5	3	4	NS	4	4	NS	4	3.98	3.27	13.01	16.0

ID	Criteria for Ranking	Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12	Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
10	<i>Project Readiness</i>	NS	4.8	4	3	5	5	5	NS	5	4	NS	4	4.42	2.52	11.14	15.1
	<b>Mean Score of Individual Scorer</b>	NS	4.05	2.90	3.55	4.10	3.40	3.40	NS	4.10	3.35	NS	3.30	<b>Overall Weighted Score w/ Watershed</b>		<b>116.38</b>	
	<b>CV (%) within Individual Scores</b>	#####	34.8	42.13	25.56	13.12	30.02	30.02	#####	13.12	19	#####	27.31	<b>Overall Weighted Score w/o Watershed</b>		<b>104.79</b>	
	<b>Standard Deviations from the Average of the Mean Scores of Individuals</b>	#####	1.203	1.692	0.056	1.328	0.433	0.433	#####	1.328	0.559	#####	0.685				

Scorer ID	Comments
1	NS
5	Lyre River Estuary Protection and Restoration - Impressive improvement; Attention to the lower portions of the Hoko and Lyre, particularly the estuaries, was very welcome.
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

<b>NOPLE 2013 Ranking Work Plan Narratives</b>	Date:
	14-Jan-13

Enter Values in the Yellow Cells

**Capital Project 09039.2**

Overall Weighted Score

McDonald Creek Barrier Removal and Channel Restoration 104.78

NS = No Score Given

CV = Coefficient of Variation (Standard deviation/Mean as %)

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12				
1	Watershed Priority	2.32	2.32	2.32	2.32	2.32	NS	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.88	6.67	0.0
2	Addresses limiting factor	4.5	4.5	5.0	4.0	5	NS	4	3.5	2.5	4.0	4	4	4.09	4.04	16.53	16.3
3	Addresses stock status and trends	4	4.7	3.0	3.5	4	NS	4	4.0	2.0	3.0	4	4	3.65	2.56	9.36	19.2
4	<i>Benefits an ESA-listed stock</i>	4	3.5	2.0	4.0	3	NS	3	4.0	3.0	3.0	4	2	3.18	3.33	10.60	21.5
5	Benefits other stocks	4	4.0	2.0	3.5	2	NS	4	3.5	3.0	3.0	3	3	3.18	3.00	9.55	21.5
6	Protects high-quality fish habitat	0	0.0	0.0	0.0	0	NS	0	0.0	0.0	1.0	4	0	0.45	3.82	1.74	254.6
7	Restores formerly productive habitat	5	4.5	2.0	4.0	4	NS	4	2.5	3.0	4.0	5	4	3.82	3.88	14.81	23.9
8	Supports restoration and maintenance of ecosystem functions	5.0	4.5	1.0	3.5	4	NS	5	4.5	3.0	4.0	5	4	3.95	3.67	14.51	28.2
9	<i>Spatial-Temporal Scale of Influence</i>	5.0	4.5	1.0	3.5	2	NS	4	4.0	3.0	3.5	3	4	3.41	3.27	11.15	31.8
10	<i>Project Readiness</i>	4	4.6	4	4	5	NS	5	2.5	3	4	4	3	3.92	2.52	9.87	19.7

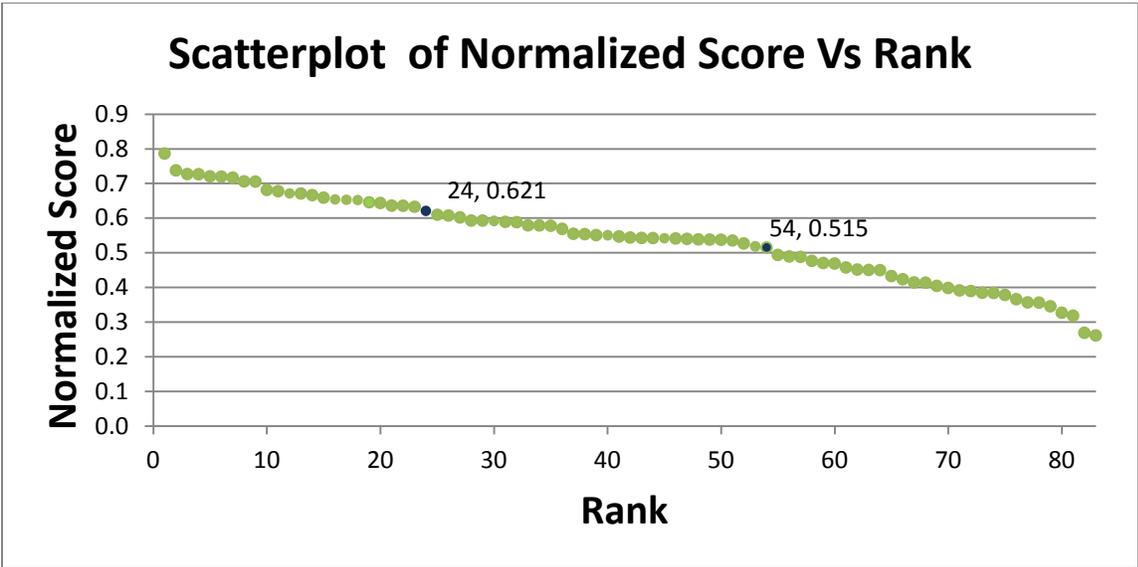
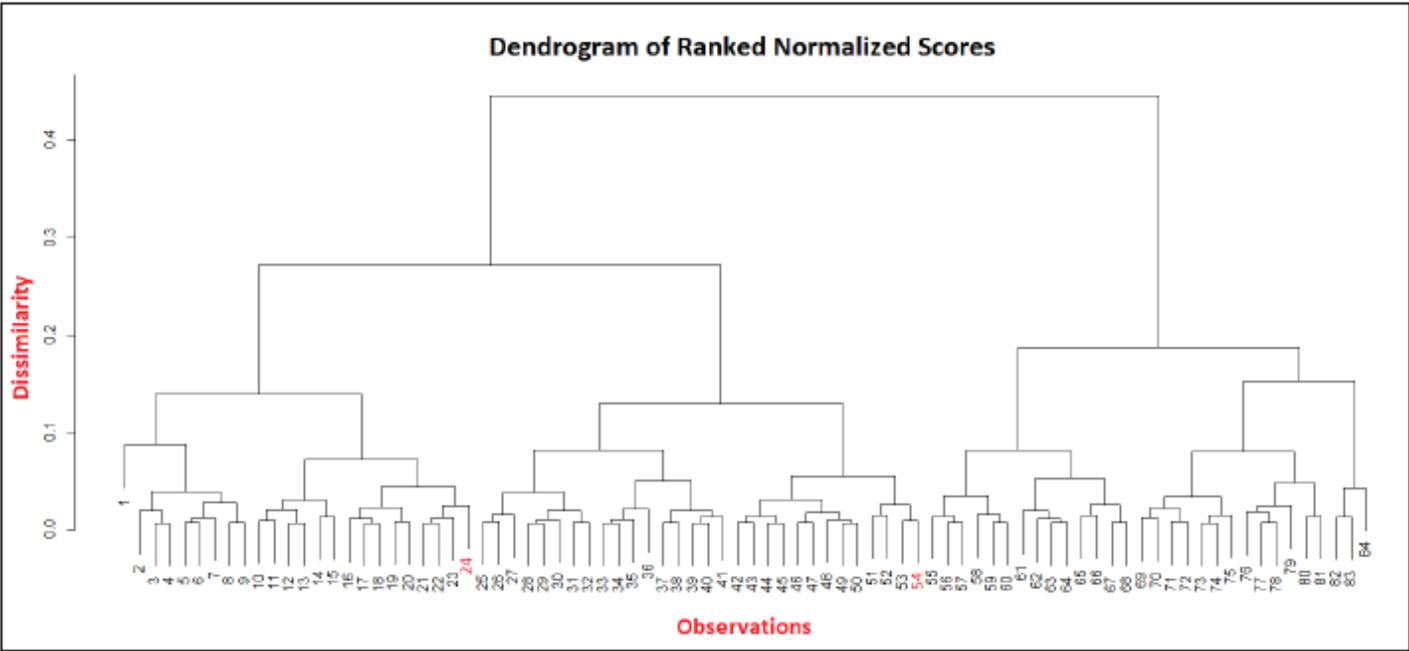
	Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12		Weighted Mean Score
<b>Mean Score of Individual Scorer</b>	3.78	3.71	2.23	3.23	3.13	NS	3.53	3.08	2.48	3.18	3.78	3.03	<b>Overall Weighted Score w/ Watershed</b>	<b>104.78</b>
<b>CV (%) within Individual Scores</b>	38.87	38.2	62.67	36.52	47.68	#####	39.68	40.59	36.11	28.78	21.49	41.01	<b>Overall Weighted Score w/o Watershed</b>	<b>98.11</b>
<b>Standard Deviations from the Average of the Mean Scores of Individuals</b>	1.212	1.067	2.007	0.07	0.138	#####	0.693	0.242	1.488	0.034	1.212	0.345		

Scorer ID	Comments
1	This write-up was very nicely done, addressing each of the criteria thoroughly yet concisely. This is also a project of importance to Dungeness and McDonald salmonids.
5	McDonald Creek Barrier Removal and Channel Restoration - Impressive improvement
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

## Review of Scoring of NOPLE 2013 Work Plan Narratives

22-Jan-13

- Thank you...
  - To those sponsors that updated their work plan narratives and/or offered new ones!
  - To the scorers for this effort!
  - To Walt Pearson for reviewing and editing the Work Book.
- In January 2013, 12 TRG members scored 4 new and 3 updated 'Capital' project narratives.
  - TRG members scored all narratives against all criteria except where they were primary sponsors or board members of primary sponsor organizations.
  - Perhaps at the 2013 Retreat, consideration will be given to whether or not feasibility studies for capital projects will be scored using capital or non-capital criteria.
    - The Hoko River Remeander Engineering Feasibility Study
- What is new in the 2013 Ranking Work Book?
  - If a score is more than 2 standard deviations from the mean it has been flagged.
- Coefficients of Variation for narratives were generally below about 40% with exceptions for criteria 4 (Benefits an ESA-listed stock), 6 (Protects high-quality fish habitat), 7 (Restores formerly productive habitat).
  - In 2012, Coefficients of Variation for narratives were generally below about 40% with exceptions for criteria 4 (Benefits an ESA-listed stock), 6 (Protects high-quality fish habitat), 7 (Restores formerly productive habitat), 9 (Spatial-Temporal Scale of Influence), & 10 (Project Readiness).
  - Criterion 4 had
    - 2 cases out of 7 where the CV was above 100%.
  - Criterion 6 had
    - 4 cases out of 7 where the CV was above 200%.
    - 1 case out of 7 where the CV was above 100% but less than 200%.
  - Criterion 7 had
    - 2 cases out 7 where the CV was above 40%.
- Visual inspection of the scatterplot indicates slight data breaks at about
  - Project ranked in 9th place, Score: 0.705- About 11% of the Narratives
  - Project ranked in 24th place, Score: 0.621- About 29% of the Narratives
  - Project ranked in 36th place, Score: 0.569- About 43% of the Narratives
  - Project ranked in 54th place, Score:0.515- About 64% of the Narratives
- The dendrogram indicates cluster breaks at about
  - Project ranked in 24th place, Score: 0.621- About 29% of the Narratives
  - Project ranked in 54th place, Score: 0.515- About 64% of the Narratives



No.	Project Description	Likely Sponsor(s)
<b>Capital Projects</b>		
<b>HABITAT</b>		
12096	<p><b>Acquisition of Priorities identified in the “Western Strait of Juan de Fuca Salmonid Habitat Conservation Plan”</b></p> <p><b>Description:</b>                      This capital project will conserve the highest priority parcels identified in The Western Strait of Juan de Fuca (WSJF) Habitat Conservation Plan (Draft). The Plan identifies and prioritizes aquatic and riparian habitat within the planning area that are important to salmon and steelhead productivity and survival. Habitats and properties along the western portion of the Strait of Juan de Fuca were prioritized based on the recommendations and a system of prioritization set forth in the WRIA 19 Salmonid Restoration Plan (North Olympic Peninsula Lead Entity for Salmon [NOPLE] 2011) and assess ecosystem function, market value, and landowner willingness on a parcel-by-parcel basis to develop a plan for land acquisition through permanent conservation easements and acquisition. This project benefits multiple stocks.</p> <p><b>Why the Project is needed (limiting factors to be addressed):</b>                      Protection of land with the best existing salmon habitat and ecosystem function on private land can only happen through voluntary conservation tools such as conservation easements. Acquisition of priority parcels will protect ecosystem function for salmonids in WRIA 19.</p> <p>These limiting factors would be eliminated if lands were permanently protected:</p> <ul style="list-style-type: none"> <li>• Floodplain development and alterations</li> <li>• Loss of large woody debris</li> <li>• Estuary and nearshore alterations</li> <li>• Degraded water quality and high stream temperatures</li> <li>• Barriers that block access to spawning and rearing habitat</li> <li>• Conversion of riparian forests to non-forest uses</li> <li>• Excess sedimentation, including fine sediment in spawning gravels</li> <li>• Degraded riparian conditions (e.g, conversion from conifer to hardwood dominated riparian forests)</li> <li>• Stream channelization and bank armoring</li> <li>• Stream cleaning</li> <li>• Channel destabilization and channel incision</li> <li>• Loss of adequate quality and quantity of spawning gravel</li> <li>• Increased peak flows</li> <li>• Unauthorized water withdrawals and low flows</li> </ul> <p>According to the Puget Sound Recovery Plan, “any further reduction in habitat quality and quantity will require more restoration to achieve recovery goals...protection is needed at the individual habitat site as well as the ecosystem scale to ensure the processes that create habitat to continue to function (p. 353). This is why it is paramount to follow the newly emerging tenet for species recovery - ‘protect the best and restore the rest’.</p> <p><b>Benefit to Salmon:</b>                      Five salmonid species are targeted to benefit from implementing the recommendations contained in this Plan: Chinook, coho, and chum salmon, and steelhead and coastal cutthroat trout. These species depend on sufficient habitat quantity and quality throughout their lifecycle.</p> <p><b>Which Salmon Recovery Plan Objective does this Project Meet and How?</b></p> <ul style="list-style-type: none"> <li>• Puget Sound Recovery Plan – Habitat: Protect Existing Physical Habitat &amp; Habitat</li> </ul>	NOLT

	<p>Forming Processes</p> <ul style="list-style-type: none"> <li>• Puget Sound Partnership – Protect Habitat</li> <li>• Salmonid and Steelhead Habitat Limiting Factors in the Western Strait of Juan De Fuca – protect channel migration zone and conifer riparian areas.</li> <li>• NOPLE Recovery Strategy 2008 - implement salmon recovery plans to protect fish habitat &amp; maintain ecosystem function.</li> <li>• WRIA 19 Salmonid Restoration Plan- Draft - Protect habitat</li> </ul> <p><b><u>How Project supports Restoration or Protection of Ecosystem Functions?</u></b>  This project would result in protection of the most important floodplain, riparian, and nearshore habitats for salmonid and steelhead productivity, based on the recommendations and a system of prioritization set forth in the WRIA 19 Salmonid Restoration Plan (North Olympic Peninsula Lead Entity for Salmon [NOPLE] 2011).</p> <p><b><u>Project’s Spatial-Temporal Scale of Influence:</u></b>  The project covers the entire WRIA, from the Elwha to the western edge of Clallam County. The projects proposed for funding will likely be clusters of high priorities in a certain reach of a river, for example the Hoko River, which ranked the highest.</p> <p><b><u>Timing Needs and Sequencing Requirements (project readiness):</u></b>  The project is ready to move forward once funding is available. The plan has many priorities for the WRIA, knowing that landowner willingness will be a limiting factor. If the highest priority is interested in conservation options, we will move down the list until there is a willing landowner.</p> <p><b><u>Range of Estimated Costs:</u></b>  The Land Trust generally prefers conservation easements, though will consider land acquisition for certain projects. If high priority parcels are acquired fee-simple, land values will probably be around \$6,000/acre, and conservation easements, on average, are about half of fair market value, \$3,000/acre. The incidental costs, including survey, appraisal and review, legal, title, forest management plan, can add up to \$30,000.</p> <p><b><u>Watershed priority &amp; watershed area (which WRIA):</u></b>  WRIA 19</p> <p><b><u>Other Key Information, especially any relationship to previous or current projects:</u></b>  The Plan was funded by the Salmon Recovery Funding Board (Project #09-1518) in 2009, and will be completed at the end of 2011. The intent of the Plan was to prioritize acquisition proposed in future funding phases. This project meets that intent.</p>	
09005	<p><b>Sekiu Mainstem (RM2-5) LWD Restoration</b></p> <p><b><u>Project Description:</u></b>  The current Fall Chinook population returning to the Sekiu is very low and habitat needs to be improved to facilitate recovery of this traditional Chinook population. Furthermore, this watershed has been severely impacted by logging and road impacts. This project will restore spawning and rearing habitat in the Sekiu Mainstem, which is known Chinook habitat. Adding LWD to this reach will create habitat complexity, providing sheltering areas for spawning adults and rearing fingerlings. LWD also has the potential to moderate temperature by creating large deep pools. It will also assist in gravel bed creation and maintenance. This project will benefit Chinook as well as coho, chum, steelhead and cutthroat. Improvement of upland habitat conditions will contribute to recovering health of estuarine areas and the nearshore migration corridor, which is used by a wide variety of species and stocks as they exit and return to Puget Sound.</p>	Makah
09006	<p><b>Sekiu, Clallam, Pysht Riparian Re-vegetation</b></p>	Makah/ LEKT/ NOSC

	<p><b>Project Description:</b>                  This project will restore the riparian zone along the independent tributaries to the Strait of Juan de Fuca. All of these rivers are known Chinook habitat, although current populations are much depressed. Re-vegetation of riparian zones will reduce sediment impacts, improve water quality, and restore channel migration zone habitat and function. Shade and eventual LWD recruitment will continue to improve resting and rearing conditions in the mainstem for returning adults and rearing young. Reducing sediment will improve spawning bed and egg incubation conditions. This project will benefit Chinook as well as coho, chum, steelhead and cutthroat. Improvement of upland habitat conditions will contribute to recovering health of estuarine areas and the nearshore migration corridor, which is used by a wide variety of species and stocks as they exit and return to Puget Sound.</p>	
13101	<p><b>Hoko River Remeander Engineering Feasibility Design</b></p> <p><b>Project Description:</b>                  This project will provide an engineering, risk, and cost assessment of reactivating a historical meander of the Lower Hoko River in WRIA 19. A channel migration study (BOR in Preparation) has discovered previously unknown aerial photographs from the 1940's and early 1950's for the estuary and lower river. These photographs suggest strongly that the large meander just above the estuary was intentionally cut by bulldozer, possibly to facilitate log transport activities (also discussed in Todd et al). This has been the contention of local citizens from WRIA 19, however, until this evidence came to light there was not a technical basis to pursue specific restoration proposals. The major restoration sponsors in WRIA 19, including North Olympic Salmon Coalition, WDFW, Lower Elwha Klallam and Makah Tribes now believe there is compelling evidence to pursue restoration options in this area. This assessment will lead to a partial restoration design (30%) for either fully or partially activating (reconnecting) the meander to restore its historical habitat conditions in the lower river and estuary. The assessment will include an analysis of available information, hydrology and flood risks, cost and benefits. This information will be used to evaluate the technical and sociological potential of advancing the project to final design and eventual implementation.</p> <p><b>Limiting Factors Addressed:</b>                  This project addresses multiple limiting factors. Habitat loss including, reduced mainstem rearing, and transitional areas for smolts and adults. Currently access into and out of the abandoned meander has been a factor limiting fish use. Within the backwatered meander water quality, specifically temperature and DO have been documented to be a problem. Correction of these conditions would address goals cited in the WRIA 19 Recovery Plan for Hoko River including: Protecting and restoring estuary and nearshore processes and habitat conditions, supporting natural process recovery, Introducing large-scale, channel-spanning wood complexes below historic meander inlet to improve flood flow connection to meander.</p> <p><b>Benefits to Salmon:</b>                  This project could lead to the reactivation of a meander that was cut off by human activities in the early 1950's. The disconnection eventually led to the dewatering of 1450 meters of former mainstem, off-channel, and estuary. The project would help to restore habitat forming processes in the Lower River and increase rearing habitat including critical estuary areas. Multiple species of salmon will benefit from this project. Hoko Chinook, which are the largest remaining portion of the western SJF Chinook population (Olympic Peninsula ESU), coho (Olympic Peninsula ESU), Olympic Peninsula chum salmon, Olympic Peninsula steelhead ESU as well as coastal cutthroat have all been documented to use habitats in this reach of the river. Although none of these stocks are federally listed, Chinook are a regional stock of concern that has been suggested for federal protection. It is also conceivable that stocks of salmon from other watersheds utilize estuary and lower river habitats in the Hoko.</p> <p><b>Recovery Plan Objectives:</b>                  The Hoko River is not currently included in any federally listed fish stocks in Washington State. There is however, a draft salmon restoration plan for WRIA 19 (NOPLE in preparation) that</p>	NOSC, LEKT, Makah

	<p>discusses the disconnection of the lower river meander and its potential for restoration (see section 5.8.1). That analysis was made prior to the recently discovered older aerial photographs. However, several Hoko River stocks are performing below their potential and are considered a stock of concern within the NOPLE planning area. Of particular note is the summer/fall Hoko River Chinook stock which is considered in a “depressed” status as it has been chronically below its escapement goal of 1,200 fish. Hoko steelhead and coho are currently considered healthy, meeting their modest escapement goals in most years. The Hoko River currently supports the largest amount of low gradient habitat of any watershed in the NOPLEG planning area and local biologists estimate that the Hoko has the necessary habitat characteristics to support a much larger population.</p> <p><b><u>Restoration or Protection of Ecosystem Function:</u></b>          This project restores ecosystem function by restoring the physical characteristics of the Lower Hoko River and its estuary. It restores natural habitat forming processes within largely protected habitat that is primarily managed by Washington State Parks. These lands are managed for recreational uses and natural values. This restoration action is complementary to those long-term management strategies.</p> <p><b><u>Spatial/Temporal Influence:</u></b>          This project potentially represents a significant restoration action in the largest watershed in WRIA 19. The Hoko Watershed is managed almost entirely for industrial timber production and has historically been degraded by those activities. Improved logging practices as a result of upgrades to Washington State Forest Practices Rules now provide riparian buffers, improvements to road management and reduction in landsliding (reductions in sediment delivery). Significant restoration actions over the last two decades such as state parks purchase of Cowan Ranch lands which led to the restoration of the Little Hoko River. More recently SRFB funded projects of note include floodplain and tributary restoration on the mainstem Hoko and Ellis Creek (Hoko-Ellis Project), the removal of culvert barriers including the largest remaining fish barrier in the Hoko River (9000 road crossing), and restoration of Brownes Creek.</p> <p><b><u>Project Readiness:</u></b>          This project would be modeled after the ongoing engineering assessment of restoration in the Pysht River estuary. A local technical advisory committee consisting of stakeholders would be formed to manage the project. This group would prepare bid documents and select the engineering firm to conduct the analysis. If funded this project could easily be completed within 2 years of the award.</p> <p><b><u>Cost:</u></b> Estimated cost is \$250,000-400,000.</p> <p><b><u>Watershed Priority:</u></b>          The Hoko River has a normalized score of 2.93, and is ranked as 8<sup>th</sup> priority watershed (5<sup>th</sup> freshwater). However it is the largest watershed in WRIA 19 and the highest priority within that area. If this project leads to fruition it would also arguable improve estuary/nearshore conditions. Nearshore projects in WRIA 18 and 19 have a normalized score of 5.0 and are the top priorities in NOPLEG.</p> <p><b><u>Miscellaneous:</u></b>          This project is complicated by the presence of a housing development constructed in the 1970’s along the western beach of the Hoko River. Completion of a preliminary design supported with necessary topographic data and hydrologic modeling combined with risk and cost-benefit analysis will be absolutely crucial in order to advance the project. Several homeowners within the development are strong salmon advocates and could be a valuable resource to communicate with the community.</p> <p><b>Photos and Graphics are available for viewing at:</b>  <a href="http://hwsconnect.ekosystem.us/Project/180/18240">http://hwsconnect.ekosystem.us/Project/180/18240</a></p>	
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11082	<p><b>Hoko River 9000 Road Barrier Correction</b></p> <p><u><b>Project Description:</b></u>                  The 9000 Road crosses the upper Hoko River at river mile 21.3. The road was originally constructed in the 1950's as a railroad grade; it was converted to a mainline logging road in the early 1970's. The existing crossing on the Hoko River is a 7' corrugated metal pipe that has an outlet drop of ~5' and is considered a total barrier to anadromous fish. LEKT in partnership with Rayonier Timber proposes to remove the existing culvert structure and replace it with a three piece prefabricated concrete bridge with a total span of ~130'. Correction of this long standing barrier would allow access to approximately 3 miles of low gradient habitat above the road crossing as well as allow fluvial transport of sediment and large wood.</p> <p><u><b>Limiting Factors Addressed:</b></u>                  This project will restore historic access to the upper portions of the Hoko River. The Hoko Watershed Analysis (Pentec 1995) identifies this culvert as the most significant barrier in the Hoko Watershed (Appendix F). This barrier has long been recognized by local habitat biologists for limiting anadromous fish access to the upper watershed.</p> <p><u><b>Benefits to Salmon:</b></u>                  This project will restore access to the upper Hoko River including approximately 3 miles of low gradient habitat. Multiple species of salmon will benefit from this project. Olympic Peninsula Chinook ESU, Olympic Peninsula coho ESU and Olympic Peninsula steelhead ESU as well as cutthroat trout will be the primary beneficiaries along with coastal cutthroat. Habitats accessed above the 9000 Road will likely provide spawning and rearing habitat primarily for coho, steelhead and cutthroat. Small numbers of Chinook may also access areas above the 9000 Road. Correction of human caused barriers is a fundamental concept in salmon habitat restoration. In a review of salmon restoration strategies in Pacific Northwest streams, Roni et al. (2006) considered these projects the highest priority for systematic watershed restoration.</p> <p><u><b>Recovery Plan Objectives:</b></u>                  The Hoko River is not currently included in any federally listed fish stocks in Washington State. There is no formal recovery plan for the Hoko River per se. However, several Hoko River stocks are performing below their potential and are considered stocks of concern. Of particular note is the summer/fall Hoko River Chinook stock which is considered in a "depressed" status because it has been chronically below its escapement goal of 1000 fish. Hoko steelhead and coho are currently considered healthy, meeting their escapement goals of 400 and 2,200 fish respectively in most years. The Hoko River currently supports the largest amount of low gradient habitat of any watershed in the NOPLEG planning area. A watershed analysis was completed for the Hoko Watershed (Pentec 1995). The analysis did not include a complete assessment of barriers in the basin; however the 9000 Road was noted (appendix F).</p> <p><u><b>Restoration or Protection of Ecosystem Function:</b></u>                  This project restores ecosystem function by restoring fish passage to historically accessible habitats in the upper Hoko Watershed. The primary land use in the Hoko Watershed is industrial forestry. Ecosystem functions are assumed to be protected through the Forest and Fish Agreement (FFA), which increased the standards of forest practices rules in Washington beginning in 2000. Examples of ecosystem protection measure instituted in the Hoko Watershed by FFA include wider riparian buffers, road improvements, identification and avoidance of geologically unstable areas and correction of fish passage barriers.</p> <p><u><b>Spatial/Temporal Influence:</b></u>                  This project represents a portion of the landowner's ongoing efforts to correct habitat problems generated by the location, historic construction practices and use of the 9000 Road. This road was originally constructed as a railroad grade adjacent to 2.5 miles of the upper</p>	LEKT/ Rayonier
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	<p>Hoko River. The road accesses large blocks of industrial forest land in the upper Hoko, Dickey and Ozette watersheds. During wet weather haul, this road has historically been a chronic producer of fine sediment to the Hoko River. Rayonier has invested significant resources to correct this problem including relocating 2.5 miles of the road to a more stable ridge top location, installing sediment control measures, improving road surfacing and limiting wet weather haul. Upstream of the 9000 Road crossing on the 9200 Road, Rayonier has corrected two other culvert barriers in the upper Hoko under the FFA.</p> <p><b>Project Readiness:</b> Preliminary engineering has been completed by Rayonier. Additional engineering is currently underway and when completed will allow for a detailed cost estimation. Permitting could begin following completion of the final engineering design and if funded this project could be implemented within 2 years of the award.</p> <p><b>Cost:</b> Estimated cost is \$350,000-450,000. Rayonier is providing a 50% cash match according to the most recent RCO policies on fish barrier projects associated with the FFA.</p> <p><b>Watershed Priority:</b> The Hoko River has a normalized score of 2.93, and is ranked as 8<sup>th</sup> priority watershed (5<sup>th</sup> freshwater).</p> <p><b>Miscellaneous:</b> This project is also related spatially/temporally to the Hoko 9000 Road Abandonment Project which is located between river mile 18.5 and 20.0 and includes removal of side cast and road fill materials, revegetation and LWD additions to that reach of the Hoko River.</p>	
11083	<p><b>Hoko River 9000 Road Abandonment</b></p> <p><b>Project Description:</b> The 9000 Road was formerly a railroad grade that connected Clallam Bay/Sekiu through the Hoko Watershed to the Sol Duc Valley. The grade was converted to a mainline logging road in the 1970's as railroad transport of logs was abandoned by the timber industry in favor of truck transport. The upper section of the 9000 Road begins at Lake Pleasant in the Sol Duc Valley and parallels portions of the Hoko River from the watershed divide at 2.4 miles to the confluence of the 6000 road (6.5 miles). This section of road has historically been a chronic producer of fine sediment to the Hoko River. Heavy use to access large tracts of forest lands in the Hoko, Dickey and Ozette watersheds, created very significant surface erosion issues. Additionally, the grade was constructed using large cut and fill surfaces that are potentially unstable. Beginning in 2000, significant efforts by the landowner have been made to improve road surfacing to reduce erosion from the road, and unstable fill that could be removed while maintaining a usable mainline road were removed. In 2005, Rayonier relocated 2.5 miles of the 9000 Road away from the Hoko River to a more stable location between the Hoko River and Bear Creek. While the early efforts to reduce landslide potential were worthwhile, large areas of unstable fill from the original grade construction remain on the old road surface. These remaining fills have landslide potential and some have recently failed and directly delivered sediment to the upper Hoko River. In this project we propose to fully abandon this portion of the old 9000 grade. Thirty-six sites have been identified for side-cast fill or stream-crossing fill removal. The material will be removed using heavy equipment and transported to stable locations for wasting. Natural water courses will be reestablished and the entire grade will be revegetated using native conifers. Additionally, LWD will be placed in the upper Hoko between River Mile 18.5-19.0 to restore in-channel fish habitat.</p> <p><b>Limiting Factors Addressed:</b> This project will reduce the risk of landslide and fine sediment delivery to the upper Hoko River, a reach which is heavily utilized for spawning and rearing by multiple species of salmon. It will restore natural water drainage patterns and increase the long-term potential of</p>	LEKT/ Rayonier

	<p>functional riparian zones along the 2.5 mile reach. Additions of large wood will improve spawning and rearing habitat in a 0.5 mile reach of low gradient stream habitat. This reach of the Hoko River is included in long-term assessment of changes of in-channel wood on Olympic Peninsula streams. Since 1982, this site has maintained very low volumes of LWD (12.0-15.5 m<sup>3</sup>/100 m). The Hoko Watershed Analysis (Pentec 1995) identifies the sedimentation and depletion of in-channel wood as significant limiting factors for salmon habitat in the Hoko Watershed (Appendices E&amp;F).</p> <p><b><u>Benefits to Salmon:</u></b>          This project will reduce the risk of accelerated sedimentation as well as improve hydrologic, riparian and in-channel spawning and rearing habitat in the upper Hoko River between river mile 18-22.5. It will also reduce potential sedimentation sources to the river as a whole. Multiple species of salmon will benefit from this project. Olympic Peninsula chinook ESU, Olympic Peninsula coho ESU, Olympic Peninsula chum salmon, Olympic Peninsula steelhead ESU as well as coastal cutthroat have all been documented to use habitats in this reach. Additions of LWD will improve pools structure in a reach that had only 35% pools by surface area (Pentec 1995). This reach is heavily utilized by multiple species of salmon for spawning and rearing.</p> <p><b><u>Recovery Plan Objectives:</u></b>          The Hoko River is not currently included in any federally listed fish stocks in Washington State. There is no formal recovery plan for the Hoko River per se. However, several Hoko River stocks are performing below their potential and are considered stocks of concern. Of particular note is the summer/fall Hoko River Chinook stock which is considered in a “depressed” status because it has been chronically below its escapement goal of 1000 fish. Hoko steelhead and coho are currently considered healthy, meeting their escapement goals of 400 and 2,200 fish in most years. The Hoko River currently supports the largest amount of low gradient habitat of any watershed in the NOPLEG planning area.</p> <p><b><u>Restoration or Protection of Ecosystem Function:</u></b>          This project restores ecosystem function by reducing the potential of direct delivery of sediment to the upper Hoko River. It also restores hydrologic, riparian and in-channel functions to this reach. The primary land use in the Hoko watershed is industrial forestry. Ecosystem functions are afforded protection by the Forests and Fish Agreement (FFA). Examples of ecosystem protection measure instituted in the Hoko watershed by FFA include wider riparian buffers, road improvements, identification and avoidance of geologically unstable areas and correction of fish passage barriers. This restoration action is complementary to those long-term management strategies</p> <p><b><u>Spatial/Temporal Influence:</u></b>          This project represents a portion of the landowner’s ongoing efforts to correct habitat problems generated by the location and use of the 9000 Road. Rayonier has invested significant resources to correct this problem including relocating 2.5 miles of the road to a more stable ridge top location, installing sediment control measures, removing unstable fill, improving road surfacing and limiting wet weather haul. Additionally, Rayonier has proposed to remove the largest remaining fish barrier in the Hoko River (9000 road crossing) and has corrected numerous other culvert barriers in the upper Hoko.</p> <p><b><u>Project Readiness:</u></b>          Preliminary engineering has been completed by Rayonier. If funded this project could be implemented within 2 years of the award.</p> <p><b><u>Cost:</u></b>          Estimated cost is \$250,000-350,000.</p> <p><b><u>Watershed Priority:</u></b>          The Hoko River has a normalized score of 2.93, and is ranked as 8<sup>th</sup> priority watershed (5<sup>th</sup> freshwater).</p>	
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	<p><b>Miscellaneous:</b> This project is also related spatially/temporally to the Hoko 9000 Barrier Correction Project.</p>	
09001.1	<p><b>Little Hoko River LWD Project</b></p> <p><b>Project Description:</b> This project is an on-going effort to improve salmon habitat; adult spawning and juvenile rearing. Between 1994 and 1998, the Little Hoko received extensive habitat restoration which included; cattle exclusion, planting of 20,000 native trees and shrubs, restructuring of channel habitats using 2,500 pieces of LWD, floodplain road abandonment, and off-channel habitat development. This project was one of the largest restoration projects conducted on the Olympic Peninsula at that time. Monitoring has shown that the project has been partially successful in restoring channel and riparian habitat features, however much of the wood that was utilized were smaller cut logs that have been buried by channel aggradation or degraded over time. In this proposal we propose to add additional LWD (200 pieces) using a helicopter. All wood will be very large coniferous trees with root wads attached and wood will be placed in aggregations to maximize channel effects. Adding additional LWD in Little Hoko will create additional habitat complexity, providing sheltering areas for spawning adults and rearing fingerlings. It will also reduce scour and assist in gravel bed creation and maintenance. Continuing the process of bed aggradation will assist with floodplain connectivity that was lost through incision caused by historic land uses.</p> <p><b>Limiting Factors Addressed:</b> This project will restore/improve spawning habitat for returning adults and provide rearing habitat for juvenile salmonids. Not only will LWD reduce scour and assist in gravel bed creation, LWD placement has the potential to moderate temperature by creating large deep pools. The Hoko Watershed Analysis (PenTech 1995) identifies the sedimentation and depletion of in-channel wood as significant limiting factors in the Hoko watershed (appendices E&amp;F). For the Little Hoko, the intentional removal of LWD along with channelization and unrestricted grazing, has led to channel incision and disconnection of its floodplain Pentech 1995, Appendix E). While the previous restoration efforts have been beneficial in promoting recovery, additional inputs of LWD are recommended based on long term monitoring conducted by LEKT (McHenry 2008).</p> <p><b>Benefits to Salmon:</b> Multiple species of salmon will benefit from this project. Olympic Peninsula chinook ESU, Olympic Peninsula coho ESU, Olympic Peninsula chum salmon, Olympic Peninsula steelhead ESU as well as coastal cutthroat have all been documented to use habitats in the Little Hoko River. Improvement of upland habitat conditions will contribute to recovering health of main-stem Hoko River and estuarine areas and the nearshore migration corridor. Additions of large wood will be designed to maximize floodplain connectivity by encouraging continued bed aggradation and lateral migration. Previously planted riparian trees are rapidly gaining height and size to partially support these processes. Unfortunately the overall stand age of the forest established some twenty years ago is still too small to support all riparian functions.</p> <p><b>Recovery Plan Objectives:</b> The Little Hoko River is not currently included in any federally listed fish stocks in Washington State. There is no formal federal recovery plan for Little Hoko River. However, a watershed analysis has been completed for the watershed (PenTec 1995). The channel section (appendix E) found that because of conversion of the forested floodplain to agricultural uses and significant wood removal, channel incision of up to a 1.5 meter had occurred. Additionally, wood recovery is listed as an important component of overall Hoko recovery. A restoration plan for the Little Hoko River prepared by LEKT (1993) guided initial restoration actions through the late 1990's. That plan included the following objectives: 1) control of unrestricted livestock grazing, 2) revegetation of floodplain riparian areas, 3) channel restructuring with LWD, 4) development of off-channel habitats (connected wetlands, ponds),</p>	LEKT

	<p>and 5) floodplain road abandonment. A long term monitoring component was also instituted to evaluate the project over time. Based on monitoring results (McHenry 2007), these objectives have largely been met although further LWD introductions were recommended.</p> <p><b><u>Restoration or Protection of Ecosystem function:</u></b>          This project restores ecosystem function by restoring fish habitat, improving riparian zones, and re-connecting floodplain throughout Little Hoko River Watershed and as such is a restoration function project. However, the lower portions of the Little Hoko River are owned by the Washington State Parks and Recreation Commission. The Cowan Ranch State Park is undeveloped and managed primarily for day use only at this time.</p> <p><b><u>Spatial/Temporal Influence:</u></b>          This project represents a continued effort to build upon LEKT’s ongoing efforts to improve habitat problems in the Little Hoko River generated by historic land uses including logging, agriculture, and channelization. Natural recovery of the system is ongoing and lands in the project area are under long term protection in Cowan Ranch State Park.</p> <p><b><u>Project Readiness:</u></b>          If funded this project could be implemented within 2 years of award. Washington Parks and Recreation has been a strong project partner during previous restoration efforts and will be asked to partner again.</p> <p><b><u>Cost:</u></b>          \$250,000-350,000</p> <p><b><u>Watershed Priority:</u></b>          Little Hoko River has a normalized score of 2.93, and is ranked as 8<sup>th</sup> priority watershed (5<sup>th</sup> freshwater).</p> <p><b><u>Miscellaneous:</u></b>          The Little Hoko River is the largest tributary of the Hoko River and was the site of the first comprehensive watershed scale restoration effort. The Hoko River currently has more available low gradient habitat than any other river in the NOPLEG planning area and currently supports the largest natural coho salmon and winter steelhead populations.</p>	
09002	<p><b>Hoko River – Emerson Flats LWD Supplementation</b></p> <p><b><u>Project Description:</u></b>          This project will restore spawning and rearing habitat in the Hoko Mainstem, approximately RM 6, which is known Chinook habitat.</p> <p><b><u>Why the Project is Needed (limiting factors addressed)?</u></b>          Adding LWD to this reach will create habitat complexity, providing sheltering areas for spawning adults and rearing fingerlings. It will also reduce scour and assist in gravel bed creation and maintenance.</p> <p><b><u>Benefit to Salmon:</u></b>          This project will benefit Chinook, as well as coho, chum, steelhead and cutthroat.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          Hoko River Fit To Strategy on <a href="http://www.Noplegroup.org">www.Noplegroup.org</a></p> <p>1. The NOPLE strategy plan, defined by WIRA 19 lists “Severe Lack of Large Woody Debris (LWD)” as one of “the major limiting factors for the Hoko River system.” “Sediment transport and water velocity effects are worsened by a severe lack of large woody debris (LWD). Many riparian areas are dominated by hardwoods, and will not contribute to future LWD. Also, it is</p>	Makah

	<p>believed that the change in age and type of surrounding forests contributes to an increased frequency and severity of peak flows.”</p> <p>2. Hoko Watershed Analysis Riparian Function</p> <p>The Department of Natural Resources completed a Hoko Watershed Analysis in 1995 that lists LWD as one of the major limiting factors. There is a low amount of LWD, the future prospect for LWD recruitment is low, and this has impacted salmonid habitat.</p> <p><b><u>Other Key Information:</u></b> Makah as project sponsor</p>	
09003	<p><b>Lower Hoko River - Riparian Revegetation</b></p> <p><b><u>Project Description:</u></b> This project will compliment phase I by restoring the riparian zone along the Hoko Mainstem, RM 1-7, which is known Fall Chinook habitat.</p> <p><b><u>Why the Project is Needed (limiting factors addressed)?</u></b> Water Resource Inventory Area 19 (Lyre-Hoko) Salmonid Restoration Plan, Chapter 5 (draft dated April 20, 2008), specifies that “Identified limiting factors in WRIA 19 include the following: ... Degraded water quality and high stream temperature and ...Degraded riparian conditions”</p> <p><b><u>Benefit to Salmon:</u></b> This project will restore known Hoko Fall Chinook habitat, and also benefit coho, chum, steelhead and cutthroat.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b> Water Resource Inventory Area 19 (Lyre-Hoko) Salmonid Restoration Plan, Chapter 5 (draft dated April 20, 2008), specifies that “Identified limiting factors in WRIA 19 include the following: ... Degraded water quality and high stream temperature and ...Degraded riparian conditions”. These are two of the numerous limiting factors that have lead to a decline in the salmonid populations in WRIA 19, and restoring the quality and quantity of healthy salmonid habitat will help restore salmonid populations on the Hoko.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b> Revegetation of riparian zones will increase channel stability thereby reducing sediment impacts and improving water quality in this reach of the river. The floodplain and channel migration zone will benefit from increased roughness by reducing water velocity and increasing floodplain storage capabilities and creating access to greater diversity of habitat for all salmonids. Shade and eventual LWD recruitment will continue to improve resting and rearing conditions in the mainstem for returning adults and rearing young. Reducing sediment will improve spawning bed and egg incubation conditions.</p> <p><b><u>Address Timing Needs &amp; Sequencing Requirements:</u></b> This project will compliment other projects by restoring the riparian zone along the Hoko Mainstem, RM 1-7, which is known Fall Chinook habitat.</p> <p><b><u>Other Key Information:</u></b> NOSC as project sponsor, Makah as sponsor</p>	NOSC/ Makah
09004	<p><b>Hoko River/Hermans Creek – Instream LWD Supplementation</b></p> <p><b><u>Project Description:</u></b> This project will restore formerly productive spawning and rearing habitat to Herman Creek, a Tributary to the Hoko River and known Chinook habitat. Adding LWD to this tributary will</p>	Makah

	<p>create habitat complexity, providing sheltering areas for spawning adults and rearing fingerlings. It will also reduce scour and assist in gravel bed creation and maintenance. Herman creek provides high quality habitat for Chinook as well as coho, steelhead and cutthroat.</p>	
11084	<p><b>Bear and Cub Creek LWD Project</b></p> <p><b><u>Project Description:</u></b>          Bear and Cub creeks are low gradient tributaries in the Upper Hoko Watershed. Historically affected by logging and road impacts, salmon habitat has been degrading over time by loss of large woody debris and pool structure. This project will restore spawning and rearing habitat in both Bear and Cub creeks for Chinook and coho salmon, steelhead and cutthroat trout. Using a heavy lift helicopter, a total of 150 large conifer logs with root wads attached will be flown into pre-selected sites in the lower reaches (river miles 0-1.5 in each creek) creating habitat complexity for sheltering spawning adults and rearing juveniles.</p> <p><b><u>Limiting Factors Addressed:</u></b>          This project will restore/improve spawning habitat for returning adults and provide rearing habitat for juvenile salmonids. Not only will LWD reduce scour and assist in gravel bed creation, LWD placement has the potential to moderate temperature by creating large deep pools that increase groundwater connectivity. Treatment reaches are focused on the lower portions of both creeks which are characterized by pool-riffle, forced pool-riffle and plane bed habitat types. These types of channels are unconstrained by their valleys, have gradients less than 3%, and generally respond favorably to the additions of large wood (Montgomery and Buffington 1993). Both Cub and Bear creeks are part of a long term study assessing changes in channel wood characteristics over time on Olympic Peninsula streams in response to logging. Both creeks continue to have dramatic reductions in wood volume. Since 1982, volumes of LWD have dropped by 84% and 72% in Cub and Bear creeks, respectively (McHenry et al. 1998; McHenry et al. In Prep.).</p> <p><b><u>Benefits to Salmon:</u></b>          This project will restore habitat and potentially benefit Chinook, coho, steelhead, and cutthroat trout; chum might also utilize these creeks. Multiple species of salmon will benefit from this project. Olympic Peninsula Chinook ESU, Olympic Peninsula coho ESU, Olympic Peninsula chum salmon, Olympic Peninsula steelhead ESU as well as coastal cutthroat have all been documented to use habitats in the Hoko River and its larger tributaries. Improvement of upstream habitat conditions will contribute to recovering health of the mainstem Hoko River and estuarine areas and the nearshore migration corridor.</p> <p><b><u>Recovery Plan Objectives:</u></b>          The Hoko River is not currently included in any federally listed fish stocks in Washington State and there are no formal federal recovery plans for either Cub or Bear creeks. However, a watershed analysis has been completed for the Hoko watershed (Pentec 1995). Wood recovery is listed as an important component of the overall watershed health (appendices E &amp;F). The Hoko Watershed Analysis found that riparian forests had been harvested between 1920's and 1960's and that extensive wood removal had occurred throughout the watershed. The current structure of riparian forests in the Hoko River is generally inadequate to provide for natural habitat-forming processes particularly with regards to in-channel wood. For example, plots of the riparian forests along Bear and Cub creeks conducted in the Hoko Watershed Analysis found that forests were dominated by deciduous trees (average 88%) with diameters that did not exceed 26" (Pentec 1995 Appendix E).</p> <p><b><u>Restoration or Protection of Ecosystem Function:</u></b>          This project restores ecosystem function by restoring in-channel fish habitat and improving floodplain connectivity throughout both tributaries. The primary land use in the Hoko Watershed is industrial forestry. Ecosystem functions are afforded protection by the Forests and Fish Agreement (FFA). Examples of ecosystem protection measure instituted in the Hoko</p>	LEKT/ Rayonier

	<p>Watershed by FFA include wider riparian buffers, road improvements, identification and avoidance of geologically unstable areas and correction of fish passage barriers. This restoration action is complementary to those long-term management strategies.</p> <p><b><u>Spatial/Temporal Influence:</u></b> This project represents an expansion of recent effort in the upper Hoko River to improve habitat conditions for anadromous fish consistent with the Forests and Fish Agreement. Two other projects are proposed just upstream of this site (Hoko 9000 Road Abandonment/Hoko 9000 Road Barrier Correction). Downstream, a large scale restoration project on the mainstem Hoko River and Ellis Creek was completed by partners in 2008. This project included the removal of a culvert barrier (trib 19.0191), abandonment of 0.5 miles of floodplain road, removal of two railroad trestles, and additions of large wood in Ellis Creek and in the mainstem Hoko River.</p> <p><b><u>Project Readiness:</u></b> If funded, this project could be implemented within 2 years of award. Project layout/design would proceed permitting. Rayonier Timberlands and the Makah Tribe would be the primary potential partners.</p> <p><b><u>Cost:</u></b> \$100,000-155,000</p> <p><b><u>Watershed Priority:</u></b> The Hoko Watershed has a normalized score of 2.93, and is ranked as 8<sup>th</sup> priority watershed (5<sup>th</sup> freshwater).</p> <p><b><u>Miscellaneous:</u></b> This project is modeled after similar projects conducted by LEKT with support from Columbia Helicopter in Sadie Creek (2004), Salt Creek (2006 and 2010), East Fork Deep Creek (2007), West Fork Deep Creek (2009) and Ellis Creek (2008). These projects have focused on small to medium-sized, low gradient streams in forested settings. The Vertol Helicopter, which is a smaller version of the Chinook, is the perfect cost effective machine for these types of settings. It is fast and causes virtually none of environmental impacts associated with ground based LWD placements.</p>	
12097	<p><b>Clallam River Tributary Culvert Replacement</b></p> <p><b><u>Description:</u></b> Located on the 203 acre Sadilek property at approximately river mile 2 on the Clallam River, this project will result in removal of two undersized (24”) culverts in a private road and replace them with a bridge. The culverts currently restrict the flow of water from a forested wetland into the unnamed tributary (Sadilek Creek for our purposes) of the Clallam River. In addition to simply being too small for winter flows, the problem at this site is exacerbated by the presence of some unknown critter that continually stuffs vegetative debris into the ends of the pipes. Weekly pipe cleaning is necessary during the winter to reduce flooding. Additionally, and most importantly from an ecosystem perspective, the pipes are perched the majority of the time and don’t allow for consistent juvenile fish access to the almost 16 acre forested wetland upstream of the culverts. A bridge is needed to allow a more functional hydrologic connection between the wetland and the Sadilek Creek while maintaining property access for the landowners and restoring juvenile fish migration up into the forested wetland where there is prime off channel over wintering habitat for Clallam River coho and steelhead.</p> <p><b><u>Why the Project is Needed (limiting factors to be addressed):</u></b> “Barriers to fish passage (culverts and dams)” and “poor off-stream rearing and overwintering habitat” are identified in the 2008 NOPL Strategy as limiting factors.</p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends?)</u></b></p>	NOSC

	<p>Which ESA-listed stock and/or non-listed stock does this project address?          The barrier removal project will open access to off channel rearing in a nearly 16 acre forested wetland. Coho, steelhead and cutthroat are expected to benefit by increased access to high quality off channel rearing habitat. No salmon or trout species in the Clallam River are currently listed under the ESA.</p> <p><b><u>Which Salmon Recovery Plan Objectives does this Project Meet &amp; How?</u></b>          This project meets goals and objectives of the NOPL 2008 Salmon Recovery Strategy. Specific goals stated in the Strategy that the project will address include:          Goal 1: Achieve robust fish stocks - this project will contribute to greater juvenile production, especially for coho, thereby likely contributing to greater harvest opportunities for this non-listed commercial and sport fish species.</p> <p>Goal 2: Implement recovery plans and protect and restore fish habitat - this project implements elements of the NOPL 2008 Salmon Recovery Strategy and the WRIA 19 Salmonid Recovery Plan related to the objective of 'Restoring Fish Passage' and will lead to one barrier removed.</p> <p>Goal 3: Restore and maintain ecosystem function and nearshore processes - Objective: Focus on protection and restoration of habitat forming process. This project restores ecosystem function to a nearly 16 acre forested wetland. This wetland is larger than any of those identified in the 2008 Clallam River Watershed Stream Habitat Inventory and Assessment as blocked by partial or full fish passage barriers. A larger opening will restore the habitat processes and hydrologic function between the forested wetland, the 0.13 miles of Sadilek Creek downstream of the barrier, and the Clallam River.</p> <p>Goal 4: Instill ecosystem awareness: The project has already led to communications with the family and local community members about the importance of the forested wetland for juvenile fish, has led to education of young field crew workers spending their time to keep the culvert clear of debris, and will become part of the sponsors education and outreach program as we educate Clallam and Jefferson County residents about the project and its benefits.</p> <p>Goal 5: Integrate efforts: Objective:Already the project has 4 partners including NOSC, the landowner, local community members and the Pacific Coast Salmon Coalition. The project will be shared through two statewide databases, the Habitat Work Schedule and Prism.</p> <p><b><u>How Project supports Restoration or Protection of Ecosystem Functions? (Does it protect high quality fish habitat or restore formerly productive habitat? Does it support restoration and maintenance of ecosystem functions?)</u></b>          The project will restore fish access to nearly 16 acres of high quality forested wetlands and will restore hydrologic connectivity between the wetland, Sadilek Creek and the Clallam River improving juvenile fish migration between the Clallam River and the forested wetland. It is a simple fix that will dramatically improve ecosystem function of an area likely to have been productive juvenile rearing habitat.</p> <p><b><u>Address the project's spatial-temporal scale of influence:</u></b>          The project will result in the construction of a simple bridge that will likely have a 50 year life span, thereby improving habitat connectivity and ecosystem function to nearly 16 acres of wetland. The size of this forested wetland is far greater than any of the other's blocked by fish passage barriers as identified in the Clallam River Assessment (Haggerty 2008) which speaks to the projects substantial spatial scale.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>          The project is ready. The landowner is ready for this project to happen and as soon as the sponsor has funding, the bridge can be designed, permitted and installed.</p> <p><b><u>Range of Estimated Cost:</u></b>          40,000-\$130,000 depending on length of opening, width of bridge and type of bridge.</p>	
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<p>11085 (90007.1)</p>	<p><b><u>Pyshy River LWD Restoration Project</u></b></p> <p><b><u>Project Description:</u></b> This project is an on-going effort to improve salmon habitat; adult spawning and juvenile rearing in the Pysht River and its largest tributary the South Fork Pysht River. Since 1994, Merrill and Ring and LEKT have conducted a series of cooperative restoration projects focusing on in-channel LWD and riparian restoration at multiple sites in those river systems. On the SF Pysht River, LWD has been added to ten reaches between river mile 0.5-7.0 using both ground based and helicopter techniques. On the mainstem Pysht River LWD has been added only on one reach (river mile 10.0-11.5) using ground based methods. Monitoring has shown that these projects have been successful in restoring channel and riparian habitat features, however the scale of wood additions to date has been less than what is required to restore habitat features at the watershed scale. Because of historic logging practices, the entire stream network is considered chronically low in LWD (McHenry et al 1994). In this proposal we propose to add additional LWD as either free key pieces using a helicopter or by constructing engineered logjams where access and stream power dictate. LWD addition locations will be focused to connect previous restoration project reaches with those that have not been treated to date. For the SF Pysht River, emphasis would be on the lower portions of the river below RM 2.5 and for the mainstem Pysht River below RM 10.0. All wood will be very large coniferous trees with root wads attached and wood will be placed in aggregations to maximize channel effects. Adding additional LWD in the Pysht River will improve habitat complexity, providing sheltering areas for spawning adults and rearing fingerlings. It will also reduce scour and assist in gravel bed creation and maintenance.</p> <p><b><u>Limiting Factors Addressed:</u></b> This project will restore/improve spawning habitat for returning adults and provide rearing habitat for juvenile salmonids. Not only will LWD reduce scour and assist in gravel bed creation, LWD placement has the potential to moderate temperature by creating large deep pools that increase groundwater exchange with the channel. A basin wide evaluation of habitat conditions identified depletion of in-channel wood and age/composition of riparian forests as significant limiting factors in the Pysht watershed (McHenry et al. 1995). Additionally, the intentional removal of LWD along with channelization from the construction of highway 112, has led to channel incision and disconnection of its the floodplain have further degraded habitat conditions While the previous restoration efforts have been beneficial in promoting recovery, additional inputs of LWD are necessary to connect reach scale restoration and expand toward watershed level restoration.</p> <p><b><u>Benefits to Salmon:</u></b> Multiple species of salmon will benefit from this project. Olympic Peninsula chinook ESU, Olympic Peninsula coho ESU, Olympic Peninsula chum salmon ESU, Olympic Peninsula steelhead ESU as well as coastal cutthroat have all been documented to use habitats in the Pysht River. Improvement of upland habitat conditions will contribute to recovering health of</p>	<p>LEKT</p>

	<p>main-stem Hoko River and estuarine areas and the nearshore migration corridor. Additions of large wood will be designed to maximize floodplain connectivity by encouraging continued bed aggradation and lateral migration. Unfortunately the overall stand age of the forest established following historic logging disturbances is still too small to support all riparian functions especially the contribution of large, coniferous LWD to channel habitat forming processes.</p> <p><b><u>Recovery Plan Objectives:</u></b>          The Pysht River supports no currently federally listed stocks of salmon; however listed stocks of chinook salmon from Puget Sound and the Columbia River have been found rearing in the Pysht River estuary (Shaeffer et al. 2009). Other species of salmon from the Pysht (i.e. Olympic Peninsula Coho) have been included within the larger and more numerous populations along the Washington coho and therefore not included with listings from Puget Sound. Two watershed analyses (Todd et al. 2006; Haggerty et al. 2006) recommend restoration of ecosystem processes in the Pysht Estuary as critical to recovering native Pysht River salmon populations.</p> <p><b><u>Restoration or Protection of Ecosystem Function:</u></b>          This project is a restoration of ecosystem function project. Because the vast majority of the watershed is managed for industrial forestry purposes, protection of ecosystem function is provided by the Forest and Fish Act (FFA). The FFA provides forest practice rules that are supposed to be consistent with the requirements of the Endangered Species Act (ESA) and the Clean Water Act (CWA).</p> <p><b><u>Spatial/Temporal Influence:</u></b>          This is a continuation of multiple reach scale in-channel and riparian restoration projects dating to 1995. In addition, several estuary restoration projects that might be undertaken with the approval of the landowner (Merrill and Ring) in the Pysht River estuary are currently being developed. Project proponents hope to build on these projects and over time restore much of the ecological processes throughout the watershed. The landowner has been a strong proponent of these efforts and has made other major contributions on their ownership in terms of barrier corrections and improvements to road surfaces/reductions in fine sediment contributions.</p> <p><b><u>Project Readiness:</u></b>          Individual reach level projects would be developed by project proponents in consultation with supportive landowners. Based on similar past project a project could be designed, permitted and constructed within 1-3 years of project award.</p> <p><b><u>Cost:</u></b>          \$1.5-3,000,000 in total. Note this project description is broad in coverage; however the project proponent envisions that smaller individual reach level projects of ~350,000/per application would be the actual outcome. Project would be tailored toward individual site conditions and landowner needs.</p> <p><b><u>Watershed Priority:</u></b>          The Pysht River estuary is located within the WRIA 19 nearshore and has a normalized score of 4.02 (4<sup>th</sup> ranked), while the Pysht River has a normalized score of 2.93 (ranked 9<sup>th</sup>).</p> <p><b><u>Miscellaneous:</u></b>          The Pysht River contains the second largest amount of currently accessible low gradient stream habitat in the NOPL planning area. Merrill and Ring has consistently supported restoration efforts on their property and has provided matching resources valued in the hundreds of thousands of dollars since 1994.</p>	
09086.1	<b>Pysht Floodplain Acquisition and Restoration</b>	<b>Phase IV and future: North</b>

<p><b><u>Project Description:</u></b>          This is a multi-phase project. Phase I and II have been completed, and NOLT acquired 58-acres fee simple and 68 acres through conservation easement (09-1528 and 10-1509). Phase III will install engineered log jams, create roughness elements within the active floodplain on the Pysht Conservation Area purchased by NOLT with grant #09-1528 and on property down river to protect instream habitat, and prevent sedimentation problems associated with Hwy 112 near milepost 23. Additional restoration may also be merited, and all restoration will be accomplished in partnership with the Makah Tribe and Lower Elwha Klallam Tribe, and some components of the restoration will involve Mike Haggerty and the Washington Department of Transportation. Phase IV and other phases will protect additional floodplain and riparian habitat along the Pysht River, by means of conservation easements and fee simple acquisition, particularly those properties identified as priorities in the Western Straits Conservation Plan. NOLT is working with landowners between RM 6.6 to approximately RM 9.9. The project will be complete when a river corridor from the estuary to River Mile 9.9 is conserved.</p> <p><b><u>Why the Project is Needed (limiting factors addressed):</u></b>          There are a number of limiting factors that are addressed by this project. According to the Salmon and Steelhead Habitat Limiting Factors in the Western Strait of Juan de Fuca, one major problem is the lack of large woody debris. Phase III proposes to install large wood instream. Another significant limiting factor sited in the LFA is the conversion of conifer riparian forest, leading to a lack of future large woody debris and high water temperatures. It is not certain whether future zoning will protect riparian functions that are still relatively intact. Conservation easements and acquisition by a local Land Trust are the only way to guarantee habitat protection in perpetuity.</p> <p>Floodplain impacts are also identified as a limiting factor for Pysht River habitat. In comparison with other watersheds in WRIA 19, the Pysht River floodplain has the highest degree of floodplain impacts per river mile. These impacts are imposed by two methods, (1) floodplain encroachment by HWY 112 and (2) previous land alterations for river crossings and agriculture. Pysht Phase III plans to address both of these disturbances. By implementing Engineered Log Jams (ELJ's), the floodplain areas will be reactivated, permitting lateral aqueous and sediment interactions. They will also facilitate instream habitat creation of pool riffle complexes in the currently channelized portion of the project. The habitat complexity created by the ELJ's will provide thermal refugia, additional cover for rearing salmonids and mitigate for sedimentation issues identified as a limiting factor from logging roads. Two ELJs will be installed downriver of the Pysht Conservation Area as part of Phase III, and those ELJs will address problems with the highway, impaired salmon habitat, and potential mass wasting. Four ELJs will be installed on the Pysht Conservation Area, and those ELJs will improve habitat, adding wood where there is a lack of large woody debris.</p> <p><b><u>Benefits to Salmon:</u></b>          This project aims to protect a highly utilized reach of Pysht river that is annually used for spawning habitat by multiple salmonid species. The Pysht River system supports nine species of freshwater fish: five species of salmonids and four species of non-salmonids (WDFW 2002; Mongillio &amp; Hallock 1997). Salmonids present include: chinook salmon (<i>Oncorhynchus tshawytscha</i>), coho salmon (<i>Oncorhynchus kisutch</i>), chum salmon (<i>Oncorhynchus keta</i>), coastal cutthroat trout (<i>Oncorhynchus clarki clarki</i>), and steelhead/rainbow trout (<i>Oncorhynchus mykiss</i>). Chinook escapements of several hundred fish were observed into the 1950s, but the run rapidly collapsed in the 1960s and 1970s (McHenry et al. 1996). A few chinook salmon are observed annually during chum and coho spawning ground surveys, however it is unclear whether these few fish represent a remnant population or strays from adjacent populations such as the Hoko River. Pysht River chum salmon are a species of concern, representing a historically large population. During the period from 1986 to 1994 Pysht River chum salmon escapements averaged 2,146 (median 1,896), from 1995 to 2003 escapement averaged 1,039 (median 800), a decrease of more than 50%.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this project meet</u></b></p>	<p><b>Olympic Land Trust;</b></p> <p><b>Phase III: Makah Tribe, Lower Elwha Klallam Tribe, WDOT, and Mike Haggerty</b></p>
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	<p><b><u>and how?</u></b></p> <ul style="list-style-type: none"> <li>• The Pysht River is included in the Western Straits Conservation Plan and has a significant amount of large river floodplain habitat, including in-channel, estuary, and floodplain/riparian acres. There are many high priority parcels along the Pysht that are not conserved. These acquisitions would be pursued as part of Phase IV and future phases. Some of the parcels would have been prioritized in the Conservation Plan, but they are already conserved.</li> <li>• This project meets the recovery goals identified in the DRAFT WRIA 19 Recovery Plan (Haggerty et al. 2009). These goals were identified as priorities by the local citizens of WRIA 19 for the recovery of both depressed salmonid stocks and the critical habitat they utilized within the Pysht river.</li> <li>• This project addresses the primary objective of the NOPLE strategy by attempting to protect and restore fish habitat on the North Olympic Peninsula while maintaining existing ecosystem function (NOPLE Strategy 2008).</li> <li>• It also exemplifies the objectives of the Puget Sound Partnership which promote protecting and restoring habitat, preservation of biodiversity, and recovery of imperiled species (Puget Sound Partnership 2008).</li> </ul> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b>  According to the Salmon and Steelhead Habitat Limiting Factors in the Western Strait of Juan de Fuca, one major problem is the lack of large woody debris. Phase III proposes to install ELJs into the riparian area and the floodplain, which will aid in restoring natural instream processes. Implementation of ELJ's promotes habitat complexity that is essential to sustaining salmonid populations in all life history phases while in freshwater. They will restore the river and floodplain interactions which have been altered and degraded for various anthropogenic uses. Another significant limiting factor sited in the LFA is the conversion of a conifer riparian forest, leading to a lack of future large woody debris and high water temperatures. It is not certain whether future zoning will protect riparian functions that are still relatively intact. Conservation easements and acquisition by a local Land Trust are the only way to guarantee habitat protection in perpetuity.</p> <p><b><u>Project's Spatial-Temporal Scale of Influence:</u></b>  This is part of a multi-phase, multi-year vision to protect from the Pysht River's estuary which is protected by a Forterra easement, to river mile 9.9. This project also furthers the goal of conserving the highest priority parcels in the WRIA 19, as identified in the Western Straits Conservation Plan.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>  Phases I and II are already complete. Phase III, ELJ implementation, has funding for design, and simply lacks funding for implementation. Implementation could be complete within a year of funding being received. Phase IV and other future phases will involve negotiations with landowners along the river, followed by acquisition fee simple or conservation easement. Landowners along the river have already expressed an interest in working with NOLT. NOLT has been working to conserve this area since 2003.</p> <p><b><u>Range of Estimated Cost:</u></b>  Engineering designs for Phase III will be provided by the Makah Tribe. They are underway. A rough estimate for implementation of Phase III is \$200,000. The design is currently funded by Makah Tribe and will likely cost about \$115,000. The Tribe is also contributing \$30,000 in large wood for the ELJs. For Phase IV, land is approximately \$6,000-\$8,000/acre if purchased fee simple, and \$3,000-\$6,000 for a conservation easement. This is what previous acquisitions on the Pysht have reflected. Depending on how much land is purchased, and what method of conservation is used (conservation easement or fee simple), the estimate will vary.</p> <p><b><u>Watershed priority &amp; watershed area or which WRIA Nearshore project is located in:</u></b>  WRIA 19. This is a high priority in the Western Straits Conservation Plan because it has a significant amount of large river floodplain habitat, including in-channel, estuary, and</p>	
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	<p>floodplain/riparian acres.</p> <p><b>Other Key Information (especially any relationship to previous or current projects):</b>          NOLT recently completed Phase I (09-1528) and Phase II (10-1509) of the project, using SRFB grant funds to purchase 58 acres of nearby Pysht River floodplain, and conserve 68 acres through conservation easement. The Pysht is also a priority in the Western Straits Conservation Plan (09-1518).</p> <p><b>Photos and Graphics are available for viewing at:</b>  <a href="http://hwsconnect.ekosystem.us/Project/180/15290">http://hwsconnect.ekosystem.us/Project/180/15290</a></p>	
09009.1	<p><b>Pysht River Salt Marsh Estuary Restoration Project</b></p> <p><b>Project Description:</b>          The Pysht River estuary was historically utilized for the marine transport of logs between 1915-1975. In order to operate and maintain this log transport facility, the lower river was channelized and periodically dredged. Dredge materials were typically discharged into salt marsh or placed along channel margins in piles. As a result, significant areas of the Pysht River estuary have been disconnected from the river. Suction dredge deposits first appear in the 1951 aerial photograph series and form a series of interconnected, large mounds on what was formerly tidal marsh in the southwest portion of the estuary. Removal options for this deposit have been explored in the recently completed <i>Pysht River Estuary Restoration Feasibility Study</i>. This project involves the removal of suction and clamshell dredge deposits placed on a 20.5 acre area of historic salt marsh in the Pysht River estuary. Dredged material would be removed to restore tidal elevations and channels so that the area would be regularly inundated by tidal cycles. Dredged materials (~138,500 yds<sup>3</sup>) would be removed and transported to upland disposal sites and stabilized. A series of tidal channels would be constructed and natural recolonization of salt tolerant native plants would be used to revegetate the site.</p> <p><b>Limiting Factors Addressed:</b>          Suction dredge deposits effectively raised the elevation of the marsh plain and converted tidally inundated marsh area to upland vegetation sites with no value for rearing salmonids and other estuary dependent species. This project would result in the direct restoration of 20.5 acres of salt marsh and tidal channels. A historic analysis of the Pysht River Estuary found that over half the historically accessible estuary had been disconnected and was no longer accessible for rearing by salmonids (Todd et al. 2006). This proposal is the largest actions identified to date that will recovery that habitat loses. Salt marsh habitats provide both rearing habitat for juvenile salmon and rich sources of food for life histories making the transition from freshwater to saltwater.</p> <p><b>Benefits to Salmon:</b>          The removal of dredge spoils over 20.5 acres will result in the reestablishment of salt marsh and associated tidal channels that drain directly into the Indian Creek slough complex. The estimated density of tidal channels created is 483 feet/acre. Tidal channels are of critical importance to salt marsh ecology and salmonid life histories. Tidal slough geometry controls physical processes such as sediment transport/storage, hydrodynamics and vegetation patterns. Several species of salmonids are known to rear in tidal changes including Chinook, chum, coho and pink salmon. A native population of chinook is thought to be extirpated (or nearly so). The Pysht River supports one of the larger populations of chum salmon in the SJF region, however its numbers are declining. Coho numbers in the Pysht are highly variable, with recent escapements ranging from 1000-7,500 adults. All three of these species could benefit by improvements in estuary habitat.</p> <p><b>Recovery Plan Objectives:</b></p>	LEKT/ Merrill & Ring/ Cascade Land Conservancy

	<p>The Pysht River supports no currently federally listed stocks of salmon, however listed stocks of chinook salmon from Puget Sound and the Columbia River have been found in the Pysht River estuary (Shaeffer et al. 2009). Other species of salmon from the Pysht (ie. Olympic Peninsula Coho) have been included within the larger and more numerous populations along the Washington coho and therefore not included with listings from Puget Sound. Two watershed analyses (Todd et al. 2006; Haggerty et al. 2006) recommend restoration of ecosystem processes in the Pysht Estuary as critical to recovering native Pysht River salmon populations.</p> <p><b><u>Restoration or Protection of Ecosystem Function:</u></b> This project is a restoration of ecosystem function project. However it should be noted that the entire 700 acre Pysht Estuary complex has been placed in a conservation easement negotiated by the Cascade Conservancy with Merrill and Ring. The easement does not allow for any future development activities but does allow for habitat restoration actions.</p> <p><b><u>Spatial/Temporal Influence:</u></b> This is the first of several large scale estuary restoration projects that might be undertaken with the approval of the landowner (Merrill and Ring) in the Pysht River estuary. Project proponents hope to build on this project and over time restore much of the ecological processes in the area that were disrupted by historic channelization necessary to maintain the log dump. Other future projects might include the removal of driven log piling lining the lower river, further dredge deposit removals and removal of road surfaces constructed adjacent to the lower river and estuary. Projects conducted in the estuary build upon a number of projects conducted in the riverine portions of the Pysht since 1994.</p> <p><b><u>Project Readiness:</u></b> A 30% engineering design has been completed for the project. Final engineering and permitting are a necessary next step and might logically be the next step in project implementation. The high cost of this project make it likely that project proponents will need to “bank” several grant sources as SRFB funding alone will likely not be adequate in any single grant application.</p> <p><b><u>Cost:</u></b> \$4,000,000.</p> <p><b><u>Watershed Priority:</u></b> The Pysht River estuary is located within the WRIA 19 nearshore and has a normalized score of 4.02 (4<sup>th</sup> ranked), while the Pysht River has a normalized score of 2.93 (ranked 9<sup>th</sup>).</p> <p><b><u>Miscellaneous:</u></b> The Pysht River estuary contains the second largest areas of salt marsh remaining in the Strait of Juan de Fuca area. Restoration of the salt marsh will result in benefits to many other species including invertebrates, non-salmonid fishes and birds. This project is similar to other similar estuary restoration projects that have been completed in Puget Sound including local projects at Jimmycomelately Creek and Discovery Bay.</p>	
09010	<p><b>IMW Restoration Treatments</b></p> <p><b><u>Project Description &amp; Purpose:</u></b> The Intensively Monitored Watershed (IMW) program has been adopted by the SRFB as a key part of its validation monitoring program. IMW is designed to assess the effects of watershed scale restoration on fish production. The IMW study plan identifies clusters of watersheds around the state where watershed scale restoration is or will occur as well as watershed where no restoration will occur (control). The Strait of Juan de Fuca complex includes two treatment (East Twin and Deep Creek) and one control (West Twin) watershed. This cluster of watersheds is arguably the most important to the overall project because of the commitment</p>	LEKT

	<p>of project partners to science based restoration and long term fish production monitoring.</p> <p>Extensive restoration has been conducted in both treatment watersheds dating to 1997 in Deep Creek and 2002 in East Twin. These projects include LWD, barrier corrections, road abandonment, riparian revegetation and off-channel development. A review of restoration treatments to date has been conducted and concludes that additional restoration efforts need to be made in order to complete the goal of achieving watershed scale restoration. Specifically these include additional LWD additions in Sadie Creek and the lower East Twin River. For both sites, access issues dictate that helicopter placement be the preferred method for importing wood into untreated reaches.</p> <p><b><u>Benefit to Salmon:</u></b> The East Twin River provides spawning and rearing habitat for coho, steelhead, chum and cutthroat trout. Chronic deficiencies in large wood have been identified for streams throughout WRIA 19 including the East Twin River and its largest tributary (Sadie Creek). Large wood is necessary to offset the lack of wood currently being contributed by riparian forests and to promote habitat forming processes in stream, floodplain and riparian habitats. Restoration of riparian forests will provide future sources of large woody debris to support habitat forming processes in the river.</p> <p><b><u>Restoration of Ecosystem Functions:</u></b> This project builds on previous efforts to achieve watershed scale restoration. Additive LWD restoration supports multiple habitat forming processes in channel as well as in floodplain and riparian habitats. These include sediment storage, pool development and connectivity with floodplains to name a few. Restoration goals are synchronized with improvements in riparian buffers through implementation of the Forest and Fish Agreement on private lands, commitments through the WDNR Habitat Conservation Plan (HCP) on state land, and for federal lands the Presidents Forest Plan.</p> <p><b><u>Certainty/Timing/Success:</u></b> This project utilizes techniques used and tested in multiple north Olympic Peninsula watersheds over the last 15 years. Restoration is additive and linked to long term monitoring efforts. Costs are based on estimates derived from similar projects conducted in the last 5 years. Long term monitoring of the overall project and its effects on fish populations is being conducted through a interagency science team chaired by the WDOE.</p> <p><b><u>Partners:</u></b> Lower Elwha Klallam, WDFW, WDOE, WDNR, NOAA, SRFB</p>	
09011	<p><b>Nearshore Restoration Strategy for Twin Rivers</b></p> <p><b><u>Project Description:</u></b> The project consists of both a land acquisition and restoration elements. The acquisition includes purchase of all or part of the LaFarge mine site, with particular focus on riparian corridor of both east and west Twins Rivers. The restoration includes 1) Reconnecting the historic Twins estuary of the two rivers and the connection of the estuary to the Strait shoreline, and 2) Removing rock and sheet pile surrounding a 3 acre pier (also called a 'mole') located entirely on WDNR leased tidelands, and cutting a channel along the base of the pier, thereby allowing the native material to feed to the nearshore naturally. Rock and sheet pile is to be disposed of upland. The 3 acre pier was constructed within Ordinary High Water Mark in the mid 1960's. The pier consists of steel and creosote treated sheet pile crib filled with native material from the adjacent bluff. The structure, built adjacent to a clay pit mine, was used as a landing for loading barges. The pier is approximately 465 feet long, 258 feet wide, and 16 feet high, which totals to 62,600 cy of fill. There is also an additional 13,000 cy of rip rap which is 2-3 man rock placed around much of the perimeter of the structure in a band approximately 25 yards wide. Assuming sheet/treated pile around the entire pier there may be approximately 1300 linear feet of shoreline with sheet and treated creosote pile.</p>	CWI, WDFW, WDNR, & LEKT

	<p><b><u>Limiting Factors, Benefit to Salmon, Project Success, Recovery Plans Timing &amp; Other Key Information:</u></b></p> <p>Collectively the Twin Rivers (WRIA 19) are important for a number of salmon stocks including coho, cutthroat, and steelhead (Roni et al 2008; Haggerty in prep). Chinook use is cited for the Twins (Kramer 1952) and juvenile Chinook are theorized to use the nearshore. The nearshore of the Twins, prized by locals for its high resources and recreation value, supports a number of critical habitats including kelp beds, eelgrass beds, and surf smelt spawning beaches (Shaffer et al. 2003; Penttilla 1999). The area is an important migratory corridor for juvenile trout (including both cutthroat and steelhead), salmon, and forage fish (Shaffer 2004 Shaffer et al 2008).</p> <p>Shaffer and Ritchie (2008) concluded that there are several impacts to the estuarine habitat occur near the East and West Twin Rivers and recommended the following list of restoration and aquisition priorities: 1. Acquisition of nearshore private properties along the Twins shoreline; 2. Restoration of the Twins nearshore by removal of the 2.5 acre fill structure in the Twins nearshore should be completed as soon as possible; 3. Additional study to define the ecological function of the Twins nearshore for Coho and Chinook, including the role lower river an shoreline alterations combined with apparently naturally occurring macroalgae blooms, may play in defining fish use in the nearshore Twins is a priority; 4. That habitat and fish management revises provisions to better protect trout and salmon species in the nearshore during later summer, fall, and winter months.</p> <p>Restoration priorities for the Twin Rivers Watersheds are listed as a Tier 2 in the North Olympic Lead Entity Group (NOPLE) strategy (Barkhuis 2004). Nearshore is listed as Tier 1. For the Twins, LWD, riparian habitat, fish passage blockages, and estuarine impacts are listed as top limiting factors (Barkhuis 2004). Subsequently, a number of large scale restoration projects have been completed or are underway on the Twins. Along the east Twin, citizens and local groups, in partnership with the Tribe, have built off channel habitat for coho. Over half of the two miles of private lands have been placed in a conservation easement. In the last two years, the Lower Elwha Klallam Tribe has constructed large LWD jams, and placed key pieces of LWD in inaccessible reaches of the East Twin River and Sadie Creek leading to the capture of large amounts of sorted gravels and the creation of complex rearing habitat.</p> <p>The East Twin River is a study watershed (along with West Twin and Deep Creek) under the SRFB's Intensively Monitored Watershed (IMW) Program. The IMW program is designed to assess changes in fish production and ecosystem response from habitat restoration. An ongoing NOAA study of juvenile salmonid survival and movement rates offers a unique opportunity to monitor the effectiveness of habitat improvements.</p> <p>Designing and permitting would take place in 2010, with construction in 2011, estimated cost have been done and are within the range for completion.</p>	
10080.1	<p><b>Lyre River Estuary Protection and Restoration</b></p> <p><b><u>Project Description:</u></b></p> <p>This project will ensure protection in perpetuity of an intact river system from the mountains to the shore, including a vital estuary and critical nearshore salmon migration corridor along the Strait of Juan de Fuca for ESA-listed Puget Sound Chinook and other salmon species. This project would do so by purchasing 280 acres in Phase I to protect the Lyre River estuary, marine shoreline, Nelson Creek, and associated wetlands. Phase I would also include removal of a house currently located within the floodplain and removal of a few creosoted logs.</p> <p>Besides the estuary and nearshore, the property contains a relatively undisturbed mature conifer forest and remnant pockets of old-growth trees, as well as three active eagle nesting trees along the shoreline. The significant and intact riparian area is important to salmon for food chain support, thermal cover, bank stabilization, large woody debris, and the water</p>	NOLT

	<p>quality protection it provides. The bulk of the watershed is in public ownership and the river’s headwaters are in Lake Crescent, which is part of Olympic National Park. Protection of this estuary will ensure that the entire watershed remains intact and will protect needed habitat now and in the future. Much of the property contains intact functioning salmonid habitat, but there are a number of restoration opportunities that would be pursued in future phases of this project including undoing the channelization of the lower river and adding large wood to further improve existing salmon habitat, as well as acquisition through fee simple or conservation easement of the remaining privately-owned parcels along the Lyre River and Nelson Creek.</p> <p><b><u>Why the Project is Needed (limiting factors to be addressed):</u></b>          In terms of this project’s technical merit, hydrology and sediment are the key limiting factors for the Lyre. Acquisition of this property provides protection for both and the ability to lessen future negative impacts. The purchase of this property and subsequent removal of a house currently located within the floodplain will benefit the hydrologic functions of Nelson Creek and the Lyre River while providing additional spawning and rearing habitat. Protection of the riparian areas will benefit the river’s temperature, sediment and wood issues. Lack of LWD and channelization in the lower mile are also limiting factors and future restoration phases will include undoing the channelization of the lower river and adding wood complexity to improve these limiting factors. Additionally, parcels targeted for this acquisition are threatened by development.</p> <p><b><u>Benefit to Salmon:</u></b>          The marine shorelines are a very important part of the salmon migration corridor along the Strait and west of the Elwha River. Estuarine habitat for ESA-listed salmon and other salmon species is limited in the Western Strait of Juan de Fuca to small pocket estuaries and intertidal areas associated with small, independent tributaries. Fish biologists and restoration practitioners’ analysis of these areas indicate that the Lyre River delta is a critical link in this chain, being the only estuarine habitat between Crescent Bay and the Salt Creek Estuary located 5 miles to the east, the Twin Creeks estuary located 6 miles to the west. Additionally, this property is only about 12 miles west of the Elwha estuary, where removal of the last of two major dams blocking ESA- listed Puget Sound Chinook is underway. The Western Strait of Juan de Fuca is part of an important migratory corridor, and the Lyre estuary is one of the critical links, providing valuable estuarine habitat.</p> <p>ESA-listed Puget Sound Chinook Salmon and other ESA salmon and steelhead species benefit from this project since this is part of the Strait of Juan de Fuca migratory nearshore being used by those fish. The Lyre River mouth is a critical link used for feeding and resting for salmon moving through the area. Chinook and Pink salmon use the Lyre River. Cutthroat trout use the Lyre and Nelson Creek. It is also likely that Bull Trout may feed at the mouth and use the lower reaches of the Lyre River as well. The Lyre also has one of the most abundant chum populations in the Strait. They are unique in their late winter run timing. The chum are heavily estuary-dependent, so healthy estuarine conditions are critical and warrant protection. The chum population suffered a precipitous decline in the late 90s. The Lyre also has a significant coho population and a wild steelhead winter run population.</p> <p><b><u>Which Salmon Recovery Plan Objectives does this Project Meet &amp; How?</u></b>          The area is identified in the draft WRIA 19 Salmon Recovery Plan and is priority #10 on the nearshore prioritization of the Western Straits Conservation Plan because of its importance for salmon and steelhead productivity and survival. If this property were converted for timber harvest, residential or resort development, then this critical habitat could be lost, followed by a serious reduction in salmonid productivity and survival.</p> <p><b><u>How Project supports Restoration or Protection of Ecosystem Functions?</u></b>          This project protects high quality fish habitat. The Lyre River is a fairly healthy riparian river system with minimum human encroachment. The significant and intact riparian area is important for food chain support, woody debris, thermal cover, bank stabilization and the</p>	
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	<p>water quality protection it provides. The proposed property to be protected also includes bluff-backed beach, barrier beach, and estuary, all of which are the likely to be used for forage fish spawning. Additionally, these habitats create and provide nearshore rearing habitat for juvenile salmonids. The continuous kelp beds just offshore are used by juvenile salmon for early marine rearing. The bluffs are a source of sediment, and transport is uninterrupted along this parcel and is part of the Whiskey Creek drift cell. There is documented surf smelt spawning in that drift cell, with this property providing the sediment for that forage fish spawning habitat.</p> <p>This project also restores formerly productive habitat. The purchase of this property and subsequent removal of a house currently located within the floodplain will benefit the hydrologic functions of Nelson Creek and the Lyre River while providing additional spawning and rearing habitat. Protection of the riparian areas will benefit the river’s temperature, sediment and wood issues. Lack of LWD and channelization in the lower mile are also limiting factors and future restoration phases will include undoing the channelization of the lower river and adding wood complexity to improve these limiting factors.</p> <p><b><u>Address the project’s spatial-temporal scale of influence:</u></b>          This project is important for the watershed. The Lyre River is one of the few remaining rivers on the Olympic Peninsula with potential to maintain a protected corridor and intact ecosystem that would secure connectivity from the Olympic Mountains to the salt water shoreline of the Strait of Juan de Fuca. The Lyre River drainage consists of approximately 85% public lands, with the bulk of the watershed in public ownership. The Lyre River originates in Lake Crescent, crown jewel of Olympic National Park which is protected in perpetuity. The deep water Lake Crescent, whose water feeds the Lyre, is also the only place in the world where the famed <i>Beardsley crescenti</i> can be found. Protection of this property, which includes the river mouth, will ensure that the watershed remains intact and will continue to provide needed habitat for salmon and other key species.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>          In terms of readiness, the project can easily begin. This property is on the market and it is an opportune time for such purchases due to depressed land costs. Funding is the only known barrier to advancing this needed protection action. Following submittal of a pre-app, it was approved for submittal of a complete application for 2013 Estuary &amp; Salmon Restoration Program (ESRP) funding. This project is also on the Puget Sound Partnership’s 2012 PSAR Large Capital Project List, ranking #8 out of 30 projects in the Puget Sound. The landowner needs to sell this property. If funding is not gained for this project soon, this significant shoreline property could be sold for timber harvest or development of large waterfront homes or resort area. There has already been additional housing development west of this property along the nearshore.</p> <p><b><u>Range of Estimated Cost:</u></b>          \$4,000,000 for Phase I. If ESRP funds the full request, \$2.7 million, and the landowners provide \$575,000 donated land value, we would be requesting \$707,000 from PSAR.</p> <p><b><u>Watershed priority &amp; watershed area or which WRIA Nearshore project is located in:</u></b>          WRIA 19 Nearshore; Lyre River watershed</p> <p><b>Photos and Graphics are available for viewing at:</b>  <a href="http://hwsconnect.ekosystem.us/Project/180/10216">http://hwsconnect.ekosystem.us/Project/180/10216</a></p>	
09012	<p><b>Nelson Creek Fish Passage Barrier Removal Project</b>          (Barrier Removal from the Route of the Former Lyre River Railroad Grade that is to be the Future Route of the Olympic Discovery Trail)</p>	CC & WDNR

	<p><b><u>Project Description:</u></b>                  This project is focused on removing fish passage barriers found on the main stem and a side stem of Nelson Creek which flows into the Lyre River. The fish passage barriers are two undersized culverts found at Nelson Creek ravine crossings along the route of the former Lyre River Railroad Grade. The Lyre River Railroad Grade has been planned for the last decade to be the permanent route of the regional multi-user trail system known as the Olympic Discovery Trail. This project would replace the existing undersized culverts with 6' to 8' culverts suitable for fish passage and restore the railroad grade fills for use as a part of the region serving multi-user trail system known as the Olympic Discovery Trail</p> <p><b><u>Why the Project is Needed (limiting factors addressed):</u></b>                  Fish passage is blocked by undersized and deteriorated culverts that block passage to a half mile long reach of the main stem of Nelson Creek and also along a side stem of Nelson Creek that extends for another half mile. In total, one mile of steam could be opened to fish passage by this improvement project. (WRIA 19 LFA)</p> <p><b><u>Benefit to Salmon:</u></b>                  Salmon are entirely blocked from the upper reaches of Nelson Creek by the fish passage barrier culverts that would be replaced under this project. Additional valuable habitat and stream areas would open up to spawning at project completion.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>                  Nelson Creek is in WRIA 19 where the watershed plan is under development. Restoring stream miles to fish passage and removing fish passage barriers is a feature of every Salmon Recovery Plan/Watershed Analysis and Plan Objective and will be a part of the WRIA 19 plan when it is completed.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b>                  Nelson Creek was not blocked for fish passage prior to construction of the railroad grade. When this restoration project is complete, the new culverts will be fish friendly allowing unhindered passage. New habitat and a much fuller range of ecosystem functions will occur in the uppermost regions of Nelson Creek. Coho stocks, steelhead, Chum and Cutthroat will benefit from this habitat restoration project.</p> <p><b><u>Certainty of Project Success:</u></b>                  There is 100% certainty of success that the fish passage barriers will be removed and that fish friendly culverts will allow fish passage to occur upon project completion.</p> <p><b><u>Address Timing Needs &amp; Sequencing Requirements:</u></b>                  Design and permitting will take place in 2010. Construction will occur in 2010. This work would occur prior to the railroad grade be converted to a regional trail facility.</p> <p><b><u>Cost Appropriateness:</u></b>                  Project costs are based on County experience with very similar salmon enhancement projects in the Joyce area.</p> <p><b><u>Other Key Information:</u></b>                  The County and DNR will be working together on this project to provide match funding. It is anticipated that DNR involvement in match may be to the level of fill and culvert removal for the culvert locations and assisting in reforestation of the area. County funding will cover a portion of the culvert replacement and fill replacement costs. SRFB funding is sought to provide a portion of the culvert replacement costs.</p>	
09013	<p><b>Salt Creek Habitat Protection</b></p> <p><b><u>Description:</u></b></p>	NOLT

	<p>The goal of this project is to permanently protect, by means of conservation easements, the best existing functional spawning and rearing habitat for Coho salmon in the Salt Creek Watershed. Salt Creek historically had relatively high productivity and supported significant runs of Coho, steelhead and cutthroat as well as Chum and Chinook. Specific properties have already been identified in Appendix 1 of <i>Salt Creek Watershed: An Assessment of Habitat Conditions, Fish Populations and Opportunities for Restoration</i>, a report prepared by Mike McHenry and Randall McCoy of the Lower Elwha Klallam Tribe Fisheries. The Assessment identifies conversion as the greatest risk to salmon. Conversion is imminent in the Salt Creek watershed unless habitat preservation is addressed. The Land Trust will contact landowners identified in the Assessment as well as landowners with property adjacent to the estuary and Crescent Bay to discuss conservation easements. The Land Trust will negotiate with willing landowners to acquire development rights by purchase and/or donation. Habitat protection in perpetuity will ensure that the best existing habitat for salmon is not converted to development. Project partners include landowners who donate their development rights to the project and Clallam County. Additional partners include LEKT and WDFW as technical advisors.</p> <p><b><u>Why the Project is Needed (limiting factors addressed):</u></b> According to the Assessment, winter steelhead have declined to critically low levels, chum are teetering on the verge of extirpation, and coho are static or declining nor are showing signs of recovery. Increasing development is an ecosystem stressor and is partially responsible for the chronic lack of large woody debris, inadequate riparian forest conditions and low flow noted in the Assessment as limiting factors. Restricting development and other activities that are detrimental to salmon habitat through conservation easements will allow forests to regenerate that will create shady conditions for Salt Creek. Mature forest is also a source for large woody debris recruitment.</p> <p><b><u>Benefits to Salmon:</u></b> The best existing habitat for salmon would be preserved in perpetuity.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this project meet and how?</u></b> Salt Creek Watershed: An Assessment of Habitat Conditions, Fish Populations and Opportunities for Restoration. Michael McHenry and Randall McCoy, Lower Elwha Klallam Tribe &amp; Michael Haggerty, fisheries/Hydrology Consultant. 2004.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b> Protection of existing functional habitat through acquisition and conservation easement is listed in the Assessment as a major action to protect and improve ecosystem function. It is not certain whether future zoning will protect ecosystem functions that are still intact. Conservation easements and acquisition by a local Land Trust are the only way to guarantee habitat protection in perpetuity.</p> <p><b><u>Certainty of Project Success:</u></b> The Assessment noted that an overwhelming majority of landowners in Salt Creek were supportive of salmon and salmon habitat. Through outreach the Land Trust can present conservation options to landowners that protect salmon habitat and the rural character of the area that is treasured by the community.</p> <p><b><u>Address Timing Needs and Sequencing Requirements:</u></b> Property ownership is rapidly changing and there are more opportunities to negotiate conservation easements and fee simple acquisition. The first year will require outreach with landowners with land adjacent to or encompassing Salt Creek's floodplain and estuary. The second and third year will involve negotiations to purchase development rights and land fee simple. We will prioritize habitat in the coastal/estuarine area first then work upstream prioritizing the best existing habitat and protecting those properties first.</p> <p><b><u>Cost Appropriateness:</u></b></p>	
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	<p>Land values are low making now an opportune time to acquire the best existing habitat for salmon.</p>	
<p>09014</p>	<p><b>Salt Creek Salt Marsh Reconnection</b></p> <p><b>Description:</b>  <u>Project Goal:</u> To restore unobstructed tidal inundation and associated ecological processes to 22.5 acres of estuary and associated salt marsh currently isolated by a private dike road.  <u>Project Objectives</u> are: 1) Provide fish access to 22.5 acres of obstructed salt marsh. 2) Improve tidal channel connectivity and decrease isolated pools in the marsh. 3) Improve salt marsh vegetation communities. 4) Maintain access to private property. 5) Do no harm to adjacent infrastructure.</p> <p>Currently the Salt Creek estuary is bisected by a 1,000’ long earthen dike which was installed in the early 1920’s. Within the 10’ high, 50’ wide dike, there are two failed wooden culverts which restrict tidal flows and fish access to over 22.5 acres of historically highly functioning salt marsh. The Salt Creek estuary is one of the only salt marsh complexes in the WRIA 19 watershed and is surpassed in scale only by the Pysht River estuary complex (Todd et al. 2006). The community is prepared for NOSC to take the lead. A critical part of the project is to assess landowner opportunities and constraints for several alternatives likely to include installation of a bridge or bridges, installation of a causeway, and road re-location. The project will include hydrologic, archaeology, geotechnical &amp; topographical studies to inform development of conceptual then final designs. The multiple community members are all key stakeholders and will be integral to selecting a project design that maximizes ecological function in a way that works for the community.</p> <p><b>Why the project is needed (limiting factors to be addressed):</b>  The project addresses the following limiting factor: Loss of salt marsh habitat due to the road bisecting the estuary. The road limits hydrologic connectivity including tidal and fresh water exchange, limits fish utilization and has been observed to lead to fish stranding on outgoing tides. (Haggarty 2009 Draft WRIA 19 Salmon Recovery Plan).</p> <p><b>Benefit to Salmon, how project addresses stock status &amp; trends and which ESA listed stock or non-listed stocks the project addresses:</b>  <u>Stock Status and Trends:</u> The project addresses stock status and trends by increasing access to important nearshore habitat for numerous natal and non-natal salmonid populations in an effort to increase productivity for stocks using the system.</p> <p><u>Listed Stocks:</u> Non-natal, migrating ESA listed Puget Sound Chinook juveniles have been documented using the Salt Creek Salt Marsh by A. Schaffer. The Salt Creek estuary is one of the first non-natal estuarine refugia for Puget Sound chinook leaving the currently designated ESU.</p> <p><u>Other Stocks:</u> Salt Creek supports stocks of coho, winter steelhead, cutthroat and chum.</p> <p><b>Which Salmon Recovery Plan Objectives does this project meet and how?</b>  The project is identified in the North Olympic Peninsula Lead Entity (NOPLE) three-year work plan (#15) and the Draft WRIA 19 Salmon Restoration Plan (Haggerty, 2010) and the Salmon and Steelhead LFA for the area (Smith, 2000). The WRIA 19 Salmon Restoration Plan provides a nice summary: “The road alters estuarine hydrology and vegetation patterns in the west side of the estuary. Tidal exchange to the west marsh is greatly diminished by drainage of water upstream of the road through drainage ditches, and the presence of two under-sized decaying wooden culverts placed under the road... Juvenile fish, including salmon, have been observed “stranded” above this road during the spring, the road accommodates very limited fish passage.” The NOPLE 2005 Strategy identifies the project as important to “Restore the connection between the Salt Marsh and the tidally influenced reaches of Salt Creek that were disconnected by a dike.”</p>	<p>NOSC</p>

	<p><b><u>How does the project support Restoration or Protection of Ecosystem Functions?</u></b>          The project restores formerly productive habitat through restoring hydrologic function. The project design will be sized to create a self-sustaining process whereby tidal and flood waters maintain habitat complexity and tidal channels.</p> <p><b><u>Spatial-temporal scale of influence:</u></b>          The project will restore 22.5 acres of salt marsh habitat. This is 1/3 of the existing salt marsh in the system. This action will improve feeding &amp; refuge for natal salmonids as well as for non-natal salmonids traveling from Puget Sound, and will be a self-sustaining design with a positive effect into the foreseeable future.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements - Project readiness:</u></b>          Since 1995, landowners, nonprofits, local tribes and governments have all tried varied avenues to address the dike road. No one has met with success yet, but significant progress has been made in this time. The informed community, partners, and project momentum that have resulted from this process makes the dike road and associated salt marsh ripe for restoration. Final consensus building in the community informed by hydrologic analysis, archaeological survey, geotechnical investigations, and engineered conceptual designs will lead to final engineering design and cost estimates, construction permitting and baseline monitoring on the project.</p> <p><b><u>Range of estimated cost:</u></b>          \$600,000-2,000,000</p> <p><b><u>Watershed priority &amp; watershed area:</u></b>          The project is located in WRIA 19 and the Salt Creek estuary is technically part of the nearshore. PSNERP defines nearshore as ‘the area from the deepest part of the photic zone (approximately -20m below MLLW) landward to the top of shoreline bluffs, or in estuaries upstream to the head of tidal influence.’ NOPLE watershed priority for nearshore projects is third on the ranked list of watershed scores in the 2009 update.</p> <p><b><u>Other Key information:</u></b>          This project was brought forward for NOPLE funding in the 2009 grant round by the Coastal Watershed Institute. Significant strides were made in the development of the project at that time, and as a result the community is ready to move forward with NOSC as the project sponsor. NOSC believes, after multiple meetings with some of the community members, that the community understands the need to explore a range of restoration possibilities, including road re-location. An insurance stipulation by the community has held up past efforts to pursue a project. Through several meetings attended by community members, it has become evident that the majority of folks are ready to move past this stipulation and it is not likely to be a barrier to the project any longer.</p>	
09015	<p><b>Salt Creek Final Fish Passage Corrections Project</b></p> <p><b><u>Description &amp; Purpose:</u></b>          Watershed analysis completed for Salt Creek in 2005 has identified the correction of human caused barriers as the highest priority for restoration in Salt Creek. Most of the barriers have been caused by culverts at road crossings. To date, significant progress has been made correcting these barriers. Of the 28 culvert barriers to fish passages identified in the watershed analysis, 15 have been or will be corrected by 2011. This proposal would treat the remaining culvert barriers with the goal of correcting all fish passage barriers in the watershed by 2015. Most of the remaining barriers are located on tributary I streams with undersized culverts on a mix of ownerships including privately owned roads, county roads and highway 112.</p> <p><b><u>Benefits to Salmon:</u></b></p>	LEKT, CCD & CC

	<p>Salt Creek supports a productive coho salmon population as well as populations of steelhead, cutthroat and a remnant chum salmon population. Correction of human caused barriers allows access to historic habitats in Salt Creek. Following their correction with structures that meet state fish passage criteria natural recolonization would be the mechanism for fish to restore access.</p> <p><b>Restoration of Ecosystem Function:</b> Restoring access to historically used habitats has been identified as the highest priority for restoring ecosystem function in Pacific Northwest watershed supporting anadromous salmonids (Roni et al. 2005). This goal has been adopted for Salt Creek at the watershed scale. Correction of all barriers in Salt Creek will allow anadromous fish to access a total of 50 miles of streams.</p> <p><b>Certainty/Timing/Success:</b> Replacement of culvert barriers with new crossing structures that meet WDFW fish passage criteria has a high probability of success. The culverts identified in this proposal block access to low gradient stream channels (&lt;4%). Correction of barriers in Salt Creek has made tremendous progress in the last 5 years and this project will continue those efforts. Note: Planning necessary to correct some barriers, particularly those owned by WDOT may require time outside of the three-year window.</p> <p><b>Partners:</b> Lower Elwha Klallam Tribe, Clallam County, Washington Department of Transportation</p>	
09016.1	<p><b>Elwha River ELJ Project</b></p> <p><b>Project Description:</b> Removal of two hydroelectric dams on the Elwha River is scheduled for 2011 as authorized by the Elwha River Ecosystem and Fisheries Act (PL102-495). Complementary to this large scale ecosystem restoration project, efforts are being made by LEKT to restore floodplain habitat conditions in the lower Elwha River below River Mile 3.5. These efforts include the removal of older flood control dikes, reforestation, control of exotic plants, barrier corrections and additions of large wood. Between 1999 and 2010, 33 engineered logjams (ELJ) have been constructed in the reach between river mile 1-5-2.5. Additionally, the Tribe has recently secured funding to construct an additional 8 ELJ's between river mile 2.5-3.0. This proposal is focused on the construction of 10 additional ELJ's in the reach between river mile 0-1.5, which is located on the Tribes reservation. This reach includes the estuary, which has been dramatically simplified as a result of channelization and truncation of sediment supplies from dam construction.</p> <p><b>Limiting Factors Addressed:</b> This project will restore habitat for salmonids by affecting geomorphology in a large floodplain river at the reach scale. Construction of ELJ's will accelerate the recovery of forested islands which support floodplain riparian communities along 1.5 miles of the Elwha River including its estuary. Forested islands by definition have mature trees that influence river morphology and habitat. The Elwha from a morphological standpoint is considered to be an anastomosing or island braided stream. Large wood and trees provide roughness that promotes a multi-channel form. These braids provide diverse spawning and rearing habitats for anadromous and resident fish. Construction of ELJ's causing both scour and depositional processes. Scour results in pool development which are the preferred rearing areas for juvenile fish and holding areas for adult fish. Sediment deposition occurs in the lee of ELJ structures and may provide substrate for spawning and/or island development. Acceleration of forest development via planting and exotic plant control will assist in the development of forests that ultimately stabilizes river form and provides a source for new woody debris.</p> <p><b>Benefits to Salmon:</b> This project will restore habitat and benefit Chinook as well as coho, steelhead, chum, pinks,</p>	LEKT

	<p>bulltrout, resident rainbow trout and cutthroat trout. Dam removal will restore natural habitat forming processes (sediment and wood transport/restoration of natural flow regimes) in the lower river and contribute to recovering health of main-stem and estuarine areas and the nearshore migration corridor. An analysis of historic aerial photographs clearly depicts the loss of habitat diversity in the lower river and particularly its estuary (Draut et al. 2009). Over time the lower river has lost large deposits of sediment (fewer islands and bars), has much lower diversity of channels, and less diversity of vegetation (age and species). These changes are attributed to the cumulative effects of dam construction which truncated sediment and wood sources and channelization.</p> <p><b><u>Recovery Plan Objectives:</u></b>          Elwha chinook are federally listed and part of the Puget Sound ESU. Dam removal is keystone for recovery of the ESU and arguable the single largest action planned in the near future. Elwha steelhead are also federally listed and part of the Puget Sound steelhead ESU, however a recovery plan has not been prepared to date for this species. However implementation of the dam removal effort will likely be a cornerstone. Puget Sound bull trout are also a federally listed fish stocks in Washington State and the Elwha River is a core population area. Puget Sound coho, while not currently listed are a species of concern, and the Elwha population is currently supported almost entirely by hatchery production. Chum and pink populations in the Elwha are considered chronically depressed and have escapements less than 1000 and 200 adults per year, respectively. Recovery of fish resources is guided by the Elwha Fisheries Restoration Plan (Ward et al. 2008). In the habitat restoration section (chapter 8) installation of ELJ's in the lower river is encouraged to restore habitat features.</p> <p><b><u>Restoration or Protection of Ecosystem Function:</u></b>          This project restores ecosystem function by restoring fish habitat, improving riparian zones, and re-connecting floodplain in the lower reaches of the Elwha River including its estuary. This project restores ecosystem function by accelerating the recovery of floodplain habitats that have been altered by dam construction and channelization. Ecosystem function is also permanently guaranteed within this area because the floodplain forest of the reservation is protected from development of any kind.</p> <p><b><u>Spatial/Temporal Influence:</u></b>          This project represents a portion of LEKT's ongoing efforts to restore the Elwha River ecosystem and its historically productive salmon populations. Floodplain restoration efforts in the lower river were initiated in 1995 and have scaled up progressively in scale and scope. In 2009, the Tribe received one of 50 NOAA habitat grants awarded nationwide under the Stimulus Act. This has allowed the Tribe to greatly advance a portion of its lower river restoration goals. While simultaneously pursuing implementation of the Elwha Act (Dam Removal), the tribe has actively pursued floodplain restoration in the lower river, development of reservoir revegetation plans, conservation of salmon genetics and ecosystem scale monitoring of the overall Elwha restoration effort.</p> <p><b><u>Project Readiness:</u></b>          This project is being systematically sequenced with other ELJ installations on the lower River. The reach between river mile 1.5-2.5 has been completed and now has 33 ELJ's more than have constructed in any large river in Washington. The reach above river 3.0 will be completed by the end of 2013 resulting in 8 additional ELJ's. This project is proposed to initiate in 2014-2015 and would result in an additional 10 ELJ's. The Tribe is in the process of updating its programmatic permits from the federal agencies to reflect the expansion of restoration efforts. It is anticipated that the Tribe will have all applicable permits prior to applying for funding for this project.</p> <p><b><u>Cost:</u></b>          \$850,000</p> <p><b><u>Watershed Priority:</u></b>          Elwha River has a normalized score of 5.00, and is ranked 1<sup>st</sup> as priority watershed.</p>	
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	<p><b>Miscellaneous:</b>                  The Elwha River has the largest productive potential of any river in the NOPLEG planning area and its productivity is intricately linked to the reestablishment of its forested floodplain. The most productive areas are located in unconstrained river valleys that have anastomosing or braided island morphology. In these areas forest features can attain sizes sufficient to form stable hard points within the floodplain. The interaction of river flows with these surfaces creates boundary conditions which promote a multi-thread channel. Multi thread channels may include surface-water, ground-water or combinations of the two that support diverse life histories of salmon.</p>	
11087	<p><b>Elwha River Revegetation Project</b></p> <p><b>Project Description:</b>                  This project will support revegetation efforts associated with implementation of the Elwha Dam removals scheduled to begin in 2011. Under that project two hydroelectric dams will be removed on the Elwha River at River Mile 4.9 and 13.5. Dam removal will drain and expose two reservoir surfaces that have accumulated ~21.5 million yd<sup>3</sup> of fine sediment. A revegetation plan (Chenoweth et al. 2010) has been developed for the two reservoir surfaces, however due to limitations in project funding, only about half the monies necessary to achieve the project goals are provided. This project will supplement those efforts by funding a 4 person tribal revegetation crew to plant native vegetation in Aldwell reservoir following its draining in 2011-12 and to conduct control of exotic vegetation in the project area. The crew will be funded for seasonal revegetation activities in the calendar years 2012-2014, directly following reservoir dewatering. The crews activities will be guided by the goals of the Elwha Regetation Plan (Chenoweth et al. 2010) and directly supervised by ecologists at the LEKT and ONP.</p> <p><b>Limiting Factors Addressed:</b>                  This project will accelerate the recovery of forested floodplain riparian communities along 6 miles of the Elwha River. The Elwha River restoration project is the largest single salmon restoration project in Puget Sound and revegetation of the reservoirs is arguable the second most important action following dam removal. The Elwha has the largest productive potential of any river in the NOPLEG planning area and its productivity is intricately linked to the reestablishment of its forested floodplain. Both reservoirs were located in unconstrained, alluvial reaches of the river dominated by forested islands. Forested islands by definition have mature trees that influence river morphology and habitat. The Elwha from a geomorphological standpoint is considered to be an anastomosing or island braided stream. Large wood and trees provide roughness that promotes a multi-channel form. These braids provide diverse spawning and rearing habitats for anadromous and resident fish. Acceleration of forest development via planting and exotic plant control will assist in the development of these critical habitats</p> <p><b>Benefits to Salmon:</b>                  This project will improve spawning and rearing for multiple species of salmon including Puget Sound chinook, Puget Sound coho ESU, Puget Sound steelhead ESU, Puget Sound chum, Puget Sound pink salmon as well as coastal cutthroat and bull trout which have all been documented to use the lower river and are expected to recolonize habitats above the dams. A sockeye salmon population has been extirpated from the Elwha River but may redevelop from the landlocked kokanee population in Lake Sutherland or from strays from other watersheds.</p> <p><b>Recovery Plan Objectives:</b>                  Elwha chinook are federally listed and part of the Puget Sound ESU. Dam removal is keystone for recovery of the ESU and arguable the single largest action planned in the near future. Elwha steelhead are also federally listed and part of the Puget Sound steelhead ESU, however a recovery plan has not been prepared to date for this species. However implementation of</p>	LEKT/ ONP

	<p>the dam removal effort will likely be a cornerstone. Puget Sound bull trout are also a federally listed fish stocks in Washington State and the Elwha River is a core population area. Puget Sound coho, while not currently listed are a species of concern, and the Elwha population is currently supported almost entirely by hatchery production. Chum and pink populations in the Elwha are considered chronically depressed and have escapements less than 1000 and 200 adults per year, respectively.</p> <p><b>Restoration or Protection of Ecosystem Function:</b> This project restores ecosystem function by accelerating the recovery of floodplain forests that support habitat forming processes. Ecosystem function is also permanently guaranteed in the former reservoir areas: the Mills surface is located within Olympic National Park, while the Aldwell surface will be protected by conservation easements.</p> <p><b>Spatial/Temporal Influence:</b> The Elwha restoration project represents the largest dam removal project conducted to date. The 308 million dollar project has been in planning for the better part of two decades and is by far the largest restoration effort conducted on the Olympic Peninsula. This project is technically supported by the Elwha Revegetation Plan (Chenoweth et al. 2010), which guides revegetation effort and is consistent with the Elwha Fisheries Restoration Plan (Ward et al. 2008). The project ties to efforts by LEKT to conduct large scale restoration of floodplain habitats in the lower river. The Elwha project as a whole is considered a watershed wide restoration effort.</p> <p><b>Project Readiness:</b> This project is ready to go in the sense that the Tribe has a trained crew that has been working on exotic plant control and revegetation for the past six years and is operating under a cooperative revegetation plan with ONP on the Elwha.</p> <p><b>Cost:</b> Estimated cost is \$150,000-200,000</p> <p><b>Watershed Priority:</b> The Elwha River has a normalized score of 5.0, and is ranked as the highest priority in the NOPLEG planning area.</p> <p><b>Miscellaneous:</b> Invasion of exotic plants on the newly exposed reservoir surfaces are the biggest threat to efforts to revegetation plans. Noxious weed source areas are targeted in the project area and include species such as knotweeds, thistles, reed canary grass, blackberries, St. Johns Wort and Herb Robert.</p>	
12100	<p><b>Elwha River Estuary Restoration Engineering Feasibility Project</b></p> <p><b>Project Description (Why Needed):</b> This project will support assess the cost and feasibility of implementing large scale estuary restoration concepts on the Elwha River. In 2011 the Lower Elwha Klallam Tribe commissioned a conceptual analysis of potential restoration scenarios in the estuary on lands owned by the Tribe. Entrix (2011) assessed several estuary restoration concepts that could complement the Elwha Dam removals beginning in 2011. Under that project two hydroelectric dams will be removed on the Elwha River at River Mile 4.9 and 13.5. Dam removal will drain and expose two reservoir surfaces that have accumulated ~21.5 million yd<sup>3</sup> of fine sediment. Sediments will be available for fluvial transport and retaining those sediments in the Elwha estuary and nearshore are critical to recovery of historic habitats. The Elwha estuary and nearshore are currently sediment starved and have been impacted by channel simplification. The engineering feasibility project would allow the tribe to perform a cost benefit analysis of several restoration concepts, including the 1) reactivation of historic distributary channels, 2) sediment retention devices, 3) abandonment of road features and 4)</p>	LEKT

	<p>engineered logjams.</p> <p><b>Limiting Factors Addressed:</b>          This project will assess possible restoration actions that could accelerate and maintain the recovery of estuary, nearshore and forested floodplain riparian communities in the Elwha River. The Elwha River restoration project is the largest single salmon restoration project in Puget Sound and estuary restoration is arguably the second most important action following dam removal. The Elwha has the largest productive potential of any river in the NOPLEG planning area and its productivity is intricately linked to the reestablishment of its forested floodplain. The estuary, nearshore and lower river have been dramatically impacted by both dam construction and historic channelization.</p> <p><b>Benefits to Salmon:</b>          This project could result in restoration actions that improve rearing habitat for multiple species of salmon including Puget Sound chinook, Puget Sound coho ESU, Puget Sound steelhead ESU, Puget Sound chum, Puget Sound pinksalmon as well as coastal cutthroat and bull trout which have all been documented to use the lower river and are expected to recolonize habitats above the dams. In addition nearshore habitat conditions for a myriad of species could also be improved.</p> <p><b>Recovery Plan Objectives:</b>          Elwha chinook are federally listed and part of the Puget Sound ESU. Dam removal is keystone for recovery of the ESU and arguable the single largest action planned in the near future. Elwha steelhead are also federally listed and part of the Puget Sound steelhead ESU, however a recovery plan has not been prepared to date for this species. However implementation of the dam removal effort will likely be a cornerstone. Puget Sound bull trout are also a federally listed fish stocks in Washington State and the Elwha River is a core population area. Puget Sound coho, while not currently listed are a species of concern, and the Elwha population is currently supported almost entirely by hatchery production. Chum and pink populations in the Elwha are considered chronically depressed and have escapements less than 1000 and 200 adults per year, respectively. Restoration of habitat and habitat forming processes in the estuary would complement overall recovery goals in the Elwha River.</p> <p><b>Restoration or Protection of Ecosystem Function:</b>          This project restores ecosystem function by accelerating the recovery of estuary and nearshore processes that support habitat forming processes. Ecosystem function is also permanently guaranteed on these reservation lands as development activities have been prohibited.</p> <p><b>Spatial/Temporal Influence:</b>          The Elwha restoration project represents the largest dam removal project conducted to date. The 308 million dollar project has been in planning for the better part of two decades and is by far the largest restoration effort conducted on the Olympic Peninsula. The project ties to efforts by LEKT to conduct large scale restoration of floodplain habitats in the lower river. The Elwha project as a whole is considered a watershed wide restoration effort.</p> <p><b>Project Readiness:</b>          This project is ready to go in the sense that the Tribe has completed a conceptual planning document but needs additional information to advance costs and benefits to policy, permitting and funding venues</p> <p><b>Cost:</b> Estimated cost is \$200,000-250,000</p> <p><b>Watershed Priority:</b>          The Elwha River has a normalized score of 5.0, and is ranked as the highest priority in the NOPLEG planning area.</p> <p><b>Miscellaneous:</b> Elwha River restoration is one of the few projects that is arguable being</p>	
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	conducted at the watershed scale. This project addresses restoration of critical habitats in ways that have not been considered to date.	
09018	<p><b>Elwha River Estuary Restoration</b></p> <p><b>Project Description:</b>                  The Elwha estuary provides critical habitat to numerous federally listed species and is a component of the nationally recognized dam removal restoration project that will begin in 2012. The project is listed in the Elwha chapter of the regional recovery plan. This project will develop and implement a short and long term strategy for ecosystem restoration focusing on property acquisition and conservation easement. Project will build on short term fish passage restoration of west levee currently underway. The project directly benefits numerous federally listed ESA species including Puget Sound (Elwha) and numerous listed Columbia river Chinook, Steelhead, Bull trout, and Eulachon.</p>	LEKT, CC, WDFW & TNC
09019	<p><b>Elwha Culvert Replacement</b></p> <p><b>Project Description:</b>                  We propose to restore Bull trout and anadromous salmonid refugia in the Elwha Watershed (OLYM) through the replacement of undersized barrier culverts on Olympic Hot Springs Road at Griff Creek, Madison Creek, and two other unnamed tributaries to the Elwha River. This project needs to proceed dam removal on the Elwha River (scheduled to begin in 2012) as culvert replacement will provide access to more than 1500 meters of high quality riverine habitat, providing critical, clear-water refuge habitat for bull trout and other fish species during the period of removal of the Glines Canyon and Elwha dams (when the mainstem of the river will carry large loads of sediment). Culvert replacement will also restore access to important tributary spawning and rearing habitat for all anadromous fish species following dam removal. The existing culverts will be replaced with culverts sized according to Washington State guidelines. The existing culverts are complete or partial barriers to upstream migration of Bull trout (a threatened species), Rainbow trout, Cutthroat trout, other resident fish species in the Elwha watershed, as well as anadromous salmonids (including listed Puget Sound Steelhead and Chinook) following removal of the dams. This project would be implemented through a partnership between the Elwha Tribe and Olympic National Park.</p>	ONP & LEKT
13102	<p><b>Little River LWD Project</b></p> <p><b>Project Description:</b>                  The Little River is a large, low to moderate gradient tributary to the Elwha River. The Little River flows into the Elwha River at the delta of the former Aldwell Reservoir and was one of the first locations colonized by salmon following the removal of Elwha Dam in 2012. Although the headwaters of Little River are protected in Olympic National Park, a significant proportion of the drainage has been historically affected by riparian logging, intentional wood removal from the channel and road construction impacts. As a result, salmon habitat has degraded over time. Reductions in large woody debris have led to increased channel incision and subsequent reductions in pool frequency and complexity. Increases in sheer stress on the channel bed associated with reductions of in-channel wood have led to a coarsening of the channel bed and increase in substrate dominated by cobble and small boulder size particles (loss of spawning gravels). This project will restore spawning and rearing habitat in Little River for multiple salmonid species. Using a combination of ground based and heavy lift helicopter techniques, a total of 150 large conifer logs with root wads attached will be placed into pre-selected sites in the lower reaches (river miles 0-1.5 in each creek) creating habitat complexity for sheltering spawning adults and rearing juveniles.</p> <p><b>Limiting Factors Addressed:</b></p>	LEKT

	<p>This project will restore/improve spawning habitat for returning adults and provide rearing habitat for juvenile salmonids. Placed LWD will directly reduce stream velocities and result in the creation of gravel beds with well sorted, smaller particle sizes favored by salmonids for spawning sites. LWD placement will also result in the creation of large deep pools with complex cover favored as rearing sites by several species of juvenile salmonids. Treatment reaches are focused between river mile 0.0 and 1.5 and include pool-riffle, forced pool-riffle and plane bed habitat types. These types of channels are generally unconstrained by their valleys, have gradients less than 3%, and typically respond favorably to the additions of large wood (Montgomery and Buffington 1993).</p> <p><b><u>Benefits to Salmon:</u></b>          This project will restore habitat and potentially benefit Chinook, coho, steelhead, chum and pink salmon as well as cutthroat and bull trout. Elwha Chinook, steelhead and bull trout are all listed as threatened under the Endangered Species Act (Puget Sound Chinook ESU, Puget Sound Steelhead ESU and Puget Sound and Coastal Bull Trout ESU, respectively). Prior to dam removal the Little River was only utilized by populations of rainbow, cutthroat and bull trout. Less than one year following the removal of Elwha Dam, the Little River has received 3 new arrivals: spawning populations of coho, winter steelhead and Chinook salmon.</p> <p><b><u>Recovery Plan Objectives:</u></b>          The Elwha River is the site of one of the largest salmon restoration projects attempted to date in the Pacific Northwest. Its restoration is guided by the Elwha River Fish Restoration Plan (NOAA 2008) which has been generally incorporated into the Puget Sound Chinook Recovery Plan. Restoration of in stream habitat using LWD on the Little River is cited in the habitat restoration section (Chapter 5) of the plan (NOAA 2008).</p> <p><b><u>Restoration or Protection of Ecosystem Function:</u></b>          This project restores ecosystem function by restoring in-channel fish habitat and improving floodplain connectivity. The primary land uses in the Little River Watershed are natural processes (Olympic National Park), industrial forestry (state and private timberlands) and rural residences. Ecosystem functions are afforded complete protection within ONP and partial protection on state and private forestlands through the Forests and Fish Agreement (FFA). Rural residency provides the lowest level of protection and relies on county zoning and development requirements. However, most residences are well away from the river and generally respect the natural values it offers. Indeed many are thrilled by the return of salmon and look forward to their arrival in future years.</p> <p><b><u>Spatial/Temporal Influence:</u></b>          This project would improve habitat conditions within a 1.5 mile reach of the Little River, one of the larger tributaries to the Elwha River. This project is complementary to the overall restoration of the Elwha watershed including dam removals, revegetation of the former reservoirs and floodplain restoration efforts such as dike removals and ELJ insertions in the lower river. The Little Rivers proximity to Elwha dam make it very important in the overall restoration effort as it is one of the first areas available for recolonization by salmon. It is also unaffected by accelerated sedimentation from dam removal itself and has clean, cool water that can serve as a refugia.</p> <p><b><u>Project Readiness:</u></b>          If funded, this project could be implemented within 2 years of award. Project layout/design would proceed permitting.</p> <p><b><u>Cost:</u></b> \$150,000-225,000</p> <p><b><u>Watershed Priority:</u></b>          The Elwha Watershed has a normalized score of 5.0, and is ranked as the top priority watershed within the NOPLEG strategy.</p> <p><b><u>Miscellaneous:</u></b></p>	
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	<p>This project is modeled after similar projects conducted by LEKT with support from Columbia Helicopter in Sadie Creek (2004), Salt Creek (2006 and 2010), East Fork Deep Creek (2007), West Fork Deep Creek (2009) and Ellis Creek (2008). These projects have focused on small to medium-sized, low gradient streams in forested settings. The Vertol Helicopter, which is a smaller version of the Chinook, is the perfect cost effective machine for these types of settings. It is fast and causes virtually none of environmental impacts associated with ground based LWD placements. Significant investments have been made in Little River by the Tribe and NOAA who are conducting long term monitoring of reconization by salmon. The Little River is intensively surveyed for adult spawners, outmigrating smolts (smolt trapping), and juvenile abundance.</p> <p><b>Photos and Graphics are available for viewing at:</b>  <a href="http://hwsconnect.ekosystem.us/Project/180/18239">http://hwsconnect.ekosystem.us/Project/180/18239</a></p>	
13103	<p><b>Ediz Hook Restoration-Phase 3</b></p> <p><b>Project Description:</b>          This project is a design-build proposal that is modeled and expands upon previous restoration projects constructed on the southern shore of Ediz Hook in the last decade. Phase 1 included restoration of 1500’ of beach along central Ediz Hook as mitigation for the Port Angeles Graving Yard project. Phase 2 was the restoration of an adjacent (east) 900’ of beach at the former “A-Frame” log dump site. This project would apply design principals from the later project to restore nearshore habitat to two discrete reaches of Ediz Hook. Reach one includes 2200’ of shoreline immediately west of the Phase 1 restoration project. Reach 2 includes 3600’ of shoreline immediately to the east of the Phase 2 project. Within this 1.1 mile reach, we would design restoration treatments to restore and enhance nearshore and beach habitats. Potential treatments include removal of hard armoring, removal of remnant creosote structures, removal of over-water structures, beach reconstruction, beach nourishment, LWD additions, limiting vehicular access, and revegetation. It is anticipated that engineering design principles from the recently completed phase 2 restoration project could be directly applied to the areas proposed for future restoration on Ediz Hook.</p> <p><b>Limiting Factors Addressed:</b>          Port Angeles Harbor is formed by Ediz Hook, a natural sand spit that has been degraded by the truncation of sediment supplies from its historic drift cell (Elwha River and bluffs between Elwha and base of Ediz Hook). Loss of sediment supplies resulted in erosion and forced armoring on the north side of the hook. Extensive industrial development inside of Port Angeles harbor in the 20<sup>th</sup> century has resulted in extensive areas of filling and armoring of the shoreline. Armored marine shorelines impact salmonids migration patterns, harbor predators and reduce benthic abundance (food sources). They also affect forage fish populations by eliminating suitable habitats for beach spawning. This project will remove armoring and restore low slope beach habitats along a 1.1 mile reach of Ediz Hook. Restoration will improve salmon migration corridors, increase benthic diversity, increase forage fish spawning potential and reduce pollutants.</p> <p><b>Benefits to Salmon:</b>          Implementation of this project would complete systematic restoration of the southern shore of Ediz Hook between the Nippon Mill and Coast Guard Base entrance, a distance of 1.6 miles. Nearshore habitat conditions would be improved for forage fish as well as a number of salmon stocks that use the nearshore as a migratory corridor. This likely includes stocks from a number of Washington watersheds, including both local (Elwha/Dungeness) and distant (Puget Sound/Columbia River) sources. Monitoring by NOAA fisheries at Ediz Hook has documented the presence of pink, chum, Chinook and coho salmon and cutthroat trout. It is not known what watersheds these fish originated; however the probability that listed stocks such as Puget Sound Chinook use this migratory corridor is high.</p>	LEKT, WDNR, City of Port Angeles

	<p><b>Recovery Plan Objectives:</b>  Port Angeles Harbor and Ediz Hook are not mentioned in the WRIA 18 limiting factors analysis or in the Chinook recovery plan. This appears to be an oversight as the harbor was likely one of the most important estuary habitats in the central Strait. Port Angeles Harbor is directly connected to the Elwha River (through the nearshore drift cell). Removal of two dams on the Elwha is expected to partially restore sediment supplies to Ediz Hook and the Harbor. The proposed project meets several goals for the NOPL strategy including: 1) achieving fish stocks that are robust to changing conditions, 2) implementation of recovery plans (Elwha), 3) restores and maintains ecosystem functions, and 4) instills ecosystem awareness.</p> <p><b>Restoration or Protection of Ecosystem Function:</b>  This project restores and maintains low slope beach habitat within Port Angeles Harbor. This habitat would be maintained by the partial restoration of sediment supplies to Ediz Hook through removal of Elwha River dams. A restored Ediz Hook would represent the longest contiguous portion of unarmored shoreline in Port Angeles Harbor. The draft amended Shoreline Management Plan for the city of Port Angeles designates the Ediz Hook shoreline as conservancy, the highest level of protection awarded.</p> <p><b>Spatial/Temporal Influence:</b>  Phase 3 restoration of Ediz Hook would result in a total of 1.6 miles of shoreline restoration within Port Angeles Harbor and complete the transformation of an industrialized shoreline to a natural low, slope beach with improved habitat and aesthetic values. As such it would represent an important beginning in a long chapter of undoing damages in the greater harbor resulting from over a hundred years of industrial development. The clean-up and restoration of Port Angeles Harbor is the now the highest restoration priority for the Lower Elwha Klallam Tribe. The city of Port Angeles also now recognizes that the Harbor could be managed for multiple uses and has moved forward on some significant projects that will improve water quality, habitat and human interactions. These include controlling stormwater overflows and de-armoring portions of the waterfront. Clean-up of the Rayonier mill site and restoration of the entire former mill site is in the planning stages. The initial discussion of harbor wide clean up including chemical pollutants and wood waste has also begun.</p> <p><b>Project Readiness:</b>  A final engineering design was completed for the Phase 2 restoration project and it is anticipated that portion of this design could be applied to portions of Ediz Hook proposed for restoration. Once designed necessary permits would be obtained. Construction could be completed during one season. We estimate the entire project could be completed in 2-3 years.</p> <p><b>Cost:</b> \$500,000.</p> <p><b>Watershed Priority:</b>  Ediz Hook is located within the WRIA 18 nearshore and has a normalized score of 5.0. Nearshore projects in the region have the top ranking.</p> <p><b>Miscellaneous:</b> Ediz Hook is heavily used by the public for recreational uses including walking, running, bicycling, bird watching. Visible nearshore restoration projects such as those on Ediz Hook receive a great deal of public support and represent excellent opportunities for education.</p> <p><b>Photos and Graphics are available for viewing at:</b>  <a href="http://hwsconnect.ekosystem.us/Project/180/18241">http://hwsconnect.ekosystem.us/Project/180/18241</a></p>	
09023	<p><b>Ediz Hook Beach Nourishment</b></p> <p><b>Project Description:</b>  This project will help restore &amp; maintain the inner spit. The outer spit is maintained by the</p>	City of PA, Port of PA, WDNR & LEKT

	<p>Army Corps. This will also complement a project on the Three Year Workplan, Ediz Hook A-frame Site Shoreline Restoration.</p> <p><b><u>Why the Project is Needed (limiting factors addressed):</u></b>          “Loss of shoreline sediment from the armoring of the water line”; and          “need for supplemental beach nourishment”          (Salmon And Steelhead Habitat Limiting Factors Water Resource Inventory Area 18).</p> <p><b><u>Benefit to Salmon:</u></b>          Restoration of the inner spit will increase forage fish spawning areas, and improve salmonid habitat and the shallow water migration corridor.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          In the Nearshore Assessment’s Executive Summary: Nearshore function of the central Strait of Juan de Fuca for juvenile fish, including Puget Sound Chinook salmon, it specifies that “Restoration of the degraded Elwha drift cell, including the feeder bluffs and Ediz Hook is ... a top priority”.</p> <p>In the Salmon And Steelhead Habitat Limiting Factors Water Resource Inventory Area 18, “Restore shoreline sediment transport from the Elwha River and the feeder bluff between the Elwha River and the west end of Ediz Hook” was the first restoration action recommended”.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b>          In the Salmon And Steelhead Habitat Limiting Factors Water Resource Inventory Area 18, it claims that “shoreline armoring is ... the greatest impact to the integrity of Ediz Hook. This armoring reduced the contribution of shoreline sediments in the shoreline drift cell that extends from the mouth of the Elwha to the end of Ediz Hook, and increased shoreline energy. ...The loss of shoreline sediment from the armoring of the water line resulted in the loss of the beach on the outer side of Ediz Hook, putting the integrity of the hook at risk.” The document also specifies the “need for supplemental beach nourishment”.</p> <p><b><u>Certainty of Project Success:</u></b>          The project is likely to succeed based on the success of similar SRFB-funded projects in Whatcom County.</p> <p><b><u>Address Timing Needs &amp; Sequencing Requirements:</u></b>          The project should take two years total. In the first year, design and permitting will be completed.</p> <p><b><u>Cost Appropriateness:</u></b>          The cost estimate is extrapolated from cost estimates in the Ediz Hook A-frame Site Shoreline Restoration, Project v#32 on the Three Year Workplan Narrative 2008.</p> <p><b><u>Other Key Information:</u></b>          Project Partners may include The Lower Elwha Klallam Tribe, the City of Port Angeles, the Port of Port Angeles, &amp; the Washington State Department of Natural Resources.</p>	
09021	<p><b>Valley Creek Restoration</b></p> <p><b><u>Project Description:</u></b>          Valley Creek in the proposed project boundaries is located in an open channel on the southern end. The channel is straight with armoring on the west bank to protect the Valley Street road prism. Little variation in morphology exists. A 3 block section, from 9<sup>th</sup> Street to 6<sup>th</sup> Street, has a service road constructed on the east side of the creek, further emphasizing the channelization of the creek in this section. Recently, the replacement of the 8<sup>th</sup> Street bridge over the valley resulted in the creation of a large wetland under the bridge and</p>	VCRC, COPA

	<p>adjacent to the Valley Creek channel.</p> <p>The northern portion of the project beginning at approximately the 6<sup>th</sup> Street right-of-way to the 2<sup>nd</sup> / 3<sup>rd</sup> alley places Valley Creek in a culvert. The culvert grade slopes anywhere from 1.19% to 1.69%.</p> <p>This project contains two parts.</p> <ol style="list-style-type: none"> <li>1. The southern portion, from approximately 9<sup>th</sup> Street to 6<sup>th</sup> Street is a re-meander of the existing open channel to move the floodway to the east, away from Valley Street, and creation of a wider riparian zone.</li> <li>2. Additionally, one block of culvert, between 5<sup>th</sup> Street and 6<sup>th</sup> Street, (approximately 200 feet) would be removed and that portion of the creek re-meandered with an enhanced riparian zone. A series of pool and riffle transitions would be created as part of the re-meandering. The entry to the culvert would be moved north and include a trash rack and a maintenance platform.</li> </ol> <p>Property acquisition for this portion has been completed with the City of Port Angeles owning the property.</p> <p>The section portion of the project would be the installation of four "fishways" or step-down weirs. These weirs would be located at intervals of 150 to 250 feet, and would have open grates at the street level. The fishways would be either 20 or 25 feet in length and contain 3 or 4 weirs.</p> <p>The project would result in the removal of approximately 1,100 feet of the access road on the east side of the creek, daylighting and re-meander of approximately 200 feet of creek, widening of the floodway and riparian zone along approximately 1,700 feet of creek, and the enhancement of approximately 700 feet of culvert which is currently a restriction to fish passage.</p>	
11088	<p><b>Ennis Creek Barrier Replacement</b></p> <p><b><u>Project Description:</u></b> This project will remove a fish passage barrier culvert at River Mile 1.0 on Ennis Creek. The existing double concrete culverts under a road used by the City of Port Angeles on East Ennis Creek will be replaced with either a bridge or a wide concrete box culvert. Rayonier, LLC is the underlying landowner.</p> <p><b><u>Limiting Factors Addressed:</u></b> This project will improve fish passage by correcting a long standing barrier to migration on Ennis Creek</p> <p><b><u>Benefits to Salmon:</u></b> This project will improve access to upstream habitats for multiple species of salmon including Puget Sound Coho ESU, Puget Sound steelhead ESU as well as coastal cutthroat which have all been documented to use habitats in Ennis Creek. Ennis Creek may also support bull trout. A chum salmon population has been extirpated from Ennis Creek but is a candidate for reintroduction following planned restoration actions in lower Ennis Creek and its estuary and nearshore.</p> <p><b><u>Recovery Plan Objectives:</u></b> Ennis Creek steelhead are part of the Puget Sound steelhead ESU, however a recovery plan has not been prepared to date for this species. Puget Sound bull trout are also a federally listed fish stocks in Washington State and Ennis Creek is included in their recovery plan as rearing and migration area. Puget Sound coho, while not currently listed are a species of concern, and the Ennis Creek population is considered depressed (or below its potential). Monitoring conducted by LEKT indicates that the adult population is well less than 100</p>	LEKT/City of Port Angeles

	<p>returning adults per year producing annual smolt outmigrations of less than 1000 coho smolts annually.</p> <p><b><u>Restoration or Protection of Ecosystem Function:</u></b>          This project restores ecosystem function by improving access to historically accessible portions of the Ennis Creek watershed. It also improves transport of sediment and large wood to downstream reaches of Ennis Creek.</p> <p><b><u>Spatial/Temporal Influence:</u></b>          This project represents a pioneering effort to initiate large scale restoration on Ennis Creek. Ennis Creek has been significantly impacted by urbanization, stormwater runoff, channelization, and industrialization of its former estuary. The now abandoned Rayonier Mill site which was constructed on top of the historic lower river and estuary has been dismantled and is being cleaned under a three way agreement between Rayonier, DOE and LEKT. A conceptual plan for the restoration of the entire site is also being prepared between these parties (as well as WDNR). The plan identifies significant restoration opportunities not only on Rayonier’s ownership but throughout the watershed. Correction of the fish passage barrier on East Ennis Creek is a logical first step towards more comprehensive restoration in future years. Significant restoration and long term conservation has already occurred on the 40 acre Mantooth property upstream of highway 101.</p> <p><b><u>Project Readiness:</u></b>          Preliminary engineering will be completed by the city of Port Angeles during the 2011 calendar year. If funded this project could be implemented within 2 years of the award. Final design, contract documents, bidding, and construction should be included in the grant project scope.</p> <p><b><u>Cost:</u></b>          Estimated cost is \$250,000-450,000.</p> <p><b><u>Watershed Priority:</u></b>          Ennis Creek has a normalized score of 2.56, and is ranked as 14<sup>th</sup> priority watershed (11<sup>th</sup> freshwater).</p> <p><b><u>Miscellaneous:</u></b>          Ennis Creek is widely recognized as having the highest potential for restoration amongst the urbanized streams of Port Angeles. Its headwaters are protected in Olympic National Park.</p>	
09020	<p><b>Ennis Creek Habitat Restoration &amp; Protection</b></p> <p><b><u>Project Description:</u></b></p> <ol style="list-style-type: none"> <li>1) Continue prior restoration, including addition of large woody debris and boulder placement on the approximately one-quarter mile of the stream that is directly south of Hwy. 101 and its fishway;</li> <li>2) Fence off the access point on the east side of the Ennis Creek ravine where it is so easy for thieves to haul out maple to sell that they have already cut down 6 maples, 75- to 100-years old, causing significant destruction of the forest canopy and erosion from their foot traffic and camps, as well as destruction from fires that could spread beyond their camps, and stream contamination from latrines they have dug and waste materials they have discarded;</li> <li>3) Decrease erosion from stormwater runoff created by new development along Del Guzzi Drive, on the west side of the Ennis Creek ravine, through enhancement of existing wetlands and better dispersal of water now flowing directly from City of PA outfall pipes and from land where native trees have been removed and impervious surfaces greatly increased;</li> <li>4) Continue the property owners’ efforts to plant trees for erosion control and eventual</li> </ol>	WFC, LEKT & NOLT

	<p>replacement of the trees thieves removed, reducing the forest canopy and eventual supply of natural LWD. The property has been designated as a sensitive area by the City of Port Angeles and the WRIA 18 salmon recovery plan describes Ennis Creek as the Port Angeles urban independent stream with the greatest potential, based on its variety of stocks, its snow-fed origins, and its relatively pristine conditions. Stocks include coho, winter steelhead and cutthroat trout, and Dolly Varden have been documented there. Fall chum are believed to have been extirpated. Smolt counts by Bob Campbell, Feiro Marine Life Center Coordinator, indicate increasing numbers from 2004 to 2008, since LWD and boulder installations and improvements to the fishway under Hwy. 101, with coho increasing from 433 to 1,060; steelhead, 182 to 877; and cutthroat from 45 to 136.</p> <p>Ennis Creek’s importance was also noted in the WRIA 18 Watershed Plan because of its accessible location for public education and outreach. The property is part of a 47-acre conservation easement upheld by North Olympic Land Trust. An adjacent part of the property is the site for the Land Trust’s annual StreamFest, which provides guided walks as well as booths hosted by businesses, agencies and organizations to provide information about environmental restoration and protection. Restoration and protection described above could add to the event’s educational potential through photos documenting the impacts for salmon habitat before and after the improvements.</p>	
09024	<p><b>Port Angeles Waterfront Property Acquisition</b></p> <p><b>Project Description:</b>          This project will acquire a 2-acre shoreline property in the City of Port Angeles for the purpose of estuary and nearshore protection and restoration for habitat, ecosystem function, and environmental education. The property includes .3 mi. of urban, heavily armored shoreline adjacent to the Valley Creek Estuary, the site of an estuary restoration project completed in 1998. Acquiring this property would give project partners the opportunity to further existing restoration efforts and preserve the site as a public park.</p> <p><b>Location of project &amp; stock status and trends:</b>  <b>From Salmon and Steelhead Limiting Factors for WRIA 18 (p. 44-45)</b>          “The Valley Creek watershed is 2.4 mi<sup>2</sup> in size, with headwaters in the lower foothills at the northern boundary of Olympic National Park (Economic and Engineering Services, Inc. 1996). Sixty percent of the watershed is in urban land use, with 50% of that land in impervious surface (TetraTech 1988). Valley Creek has been significantly altered to accommodate urban and industrial development in Port Angeles, and is heavily impacted by stormwater runoff from the urban and industrial development. The level of habitat degradation has been great enough to extirpate all salmonid species except for cutthroat trout. Ironically, with the construction of an engineered 1.5 acre estuary in 1998, Valley Creek is now the primary focus of restoration efforts within the urban streams of Port Angeles. A conceptual restoration plan for the watershed has been developed (McHenry and Odenweller 1998).”</p> <p><b>From Salmon and Steelhead Limiting Factors, Estuarine (p.147)</b>          Valley Creek is the site of a well-publicized estuary restoration project completed in 1998. This project was actually a mitigation project for filling of a log pond by the Port of Port Angeles. The newly created estuary, although actually representing only a 1.5 acre opening in the otherwise heavily armored Port Angeles harbor shoreline, perhaps represents an important change in local shoreline management philosophies. Historically, the Valley Creek estuary was much different, likely discharging to the harbor over an intertidal flat shortly after passing through the bluffs.          This area has since been filled and culverted to accommodate urban waterfront development. The Valley and Tumwater Creek estuaries may have interacted because of their physical proximity (separated by a narrow bluff).</p> <p><b>Why the Project is Needed (limiting factors addressed):</b>          LFA WRIA 18 - Habitat Loss, degraded nearshore and estuarine conditions.</p>	NOLT, COPA, LEKT & VCRC

	<p>PA Shoreline Plan - "Public access to the water along Railroad Avenue is limited and uninviting – an important potential exists." (p.2).          Opportunities exist to enhance previous restoration efforts that would benefit multiple stocks after the property is purchased.</p> <p><b><u>Benefits to Salmon:</u></b>          Acquire and protect land for restoration that will benefit Puget Sound Chinook, coho, and winter steelhead, and other species that use Valley Creek and the nearshore.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this project meet and how?</u></b>          Port Angeles Shoreline Rehabilitation Plan, 1982. "Reestablish shoreline edges" and "public access to the waterfront edge". (p. 9)          NOPLE Recovery Plan. Goals 2, 3, 4, 5          Puget Sound Partnership – Harbor cleanup goals</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b>          This project will expand Valley Creek's Estuary habitat and improve ecosystem function. Acquiring this property would fulfill NOPLE's goal to instill public awareness about salmon recovery because of its central location. Humans and the community of Port Angeles are also a part if this ecosystem and this project is congruous with the Port Angeles Shoreline plan which states, "Improvements of the waterfront area would strengthen the vitality of the Central Business District, and the city, create public amenity for local residents and create a positive image of this country..." (summary).</p> <p><b><u>Certainly of Project Success:</u></b>          The Landowner, owner of Olympic Lodge, LLC made a public statement explaining why he purchased the waterfront property. He did so to reduce the threat of competition of other hotels so he wishes to leave the property undeveloped. I am optimistic that the landowner would work with North Olympic Land Trust to keep the land undeveloped, make it available for restoration, and eventually make the resource available to the public for enjoyment and education.</p> <p><b><u>Address Timing Needs and Sequencing Requirements:</u></b>          The purpose of this project is to buy land for future restoration of the Valley Creek estuary and marine shoreline. The City or the Port owns most waterfront property in the Central Business District of Port Angeles. This property is one of the few remaining privately owned parcels of land that has not been developed. The property is for sale now and the landowner is willing.</p> <p><b><u>Cost Appropriateness:</u></b>          The property is on the market for 2.7 M. The landowner is interested in keeping this property undeveloped, as open space so might be interested in a bargain sale – since the development potential of the property makes up much of its value.</p>	
09026	<p><b>Morse Creek Property Acquisition</b></p> <p><b><u>Project Description:</u></b>          This project will acquire two desirable properties along Morse Creek at the upstream end of the Morse Creek Re-meander project. The properties were originally part of the larger property acquisition carried out by WDFW which resulted in the 100 acres purchased along Morse Creek. Unfortunately, funds ran out and the Cottonwood Lane properties were not acquired as part of the larger purchase. Currently, WDFW is facing a need to purchase lands to compensate SRFB for the construction of chinook rearing ponds along Morse Creek and additional funds would facilitate the acquisition of these high priority properties adjacent to the future floodplain reconnection. (See related project in the work plan: Morse Creek Re-Meander)</p>	WDFW

	<p><b><u>Limiting Factors Addressed:</u></b> The project will address limiting factors related to increasing stream length, complexity, riparian habitat, and floodplain connectivity to increase and improve spawning and rearing habitat for all salmonids historically and potentially using Morse Creek</p> <p><b><u>Stock Status and Trends:</u></b> Anadromous fish stocks have been in steady decline in Morse Creek, largely due to the channelization of the lower creek. This project is expected to assist in arresting that trend, and possibly even reversing it in time.</p> <p><b><u>Listed Stocks:</u></b> It is inhabited by bull trout, winter steelhead and ESA listed Strait of Juan De Fuca summer chum,. Puget Sound Chinook are a historic resident but were recently extirpated in Morse Creek. A chinook rearing facility is planned for downstream of the project reach to preserve genetic stocks from the Elwha in preparation for dam removal.</p> <p><b><u>Other Stocks:</u></b> Pink salmon, coho salmon, summer steelhead, sea-run cutthroat trout</p> <p><b><u>Habitat Status:</u></b> The current alignment of Morse Creek is an artifact of intentional channelization that occurred during the 1950-1970's by previous landowners and likely in cooperation with the Washington Department of Transportation. Morse Creek was straightened and moved to the west side of its valley and forced through an artificially small bridge opening on Highway 101. Channelization below Highway 101 to the Strait of Juan de Fuca was also extensive. These activities have greatly changed the velocity conditions and therefore spawning and rearing habitat critical to support native anadromous salmon populations. The Lower 1.5 miles of Morse Creek are essentially a flume with very little spawning or rearing habitat. The channel has degraded to bedrock in most places. Habitat surveys conducted by the Tribe and Peninsula College show that in this reach only 14% of the total surface area is classified as pool habitat.</p> <p><b><u>Ecosystem Restoration:</u></b> The project will accomplish the reconnection of Morse Creek to its historic floodplain. Ecosystem function will be immediately restored. A canopy of mature alder and cottonwood, and undergrowth of some conifers exists and will remain intact which provides immediate improvement to creek conditions and habitat features for both stream, wetland and forest species.</p> <p><b><u>Partnerships:</u></b> This project is being conducted through a partnership with WDFW (project lead) and North Olympic Salmon Coalition (project support).</p>	
10079.1	<p><b>Lower Morse Creek Feasibility Study</b></p> <p><b><u>Project Description:</u></b> A feasibility study is needed to explore the restoration options for the lower 1.2 miles of Morse Creek where it passes through 4 Season's Ranch, a private community. This effort builds on current and earlier work taking place on .5 miles of creek just upstream. Linking the lower reach to the upstream reach is integral to recovery of habitat in this watershed. The feasibility study will include necessary survey, hydrologic, archaeological, geotechnical and instream and riparian investigations to inform development of a suite of possible enhancement actions. A critical component to the project will be landowner meetings with the 4 Season's Ranch Community to determine the community member's needs, concerns and support for possible restoration actions. This information will be brought together with technical information to develop restoration alternatives.</p>	NOSC

	<p><b><u>Why the Project is Needed (limiting factors addressed):</u></b>          Fish habitat throughout this reach and extending to the estuary is extremely poor. The channel is straightened, confined and cut off from its floodplain. There are very few pools (3 according to the WRIA 18 LFA) and no habitat features such as woody debris or side channels. Gravel size tends to be too large for spawning due to high velocities flushing material out of the system. Riparian cover is also somewhat limited in parts of this reach. Fish navigating the reach encounter high velocities and over-simplified habitat. This project is the next major action for Morse Creek following the completion of the re-meander upstream in 20010. The entire Morse Creek estuary exists on these properties. It is vastly impacted and simplified.</p> <p><b><u>Benefit to Salmon:</u></b>  <u>ESA Listed Stocks:</u> Morse Creek is home to multiple stocks of imperiled salmonids. The project targets ESA listed steelhead and bull trout, pink salmon, chum and coho salmon. All stocks use the creek for spawning and rearing. Morse is within the ESU for ESA listed chinook however, Puget Sound chinook are extirpated from Morse Creek. Out planting of Elwha chinook into the system has taken place since 2005, and raceways for juvenile Elwha chinook for stock protection during Elwha dam removals are located on Morse Cr. The project concepts developed in this study will aim to improve spawning, rearing, holding and/or riparian habitats.</p> <p><u>Non Listed Stocks:</u> Coho, pink, chum, trout</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          The WRIA 18 LFA identifies these restoration actions as important to Morse Creek.</p> <ul style="list-style-type: none"> <li>• “Restore floodplain function downstream of RM 1.7, including the removal of portions of dikes, elimination of floodplain constrictions, and restoration of natural banks”</li> <li>• ‘Restore large woody debris (LWD) presence throughout the channel downstream of the natural falls at RM 4.9; develop and implement a short-term LWD strategy to provide LWD presence and habitat diversity until full riparian function is restored.</li> <li>• “Restore riparian function by encouraging conifer regeneration in deciduous stands that historically had a conifer component”</li> <li>• Todd et. al list the estuary as severely impaired</li> </ul> <p><b><u>How Project supports Restoration or Protection of Ecosystem Functions:</u></b>          The project will aim to enhance severely impacted, formerly productive habitat. This reach contains 25% of the anadromous zone of Morse Cr and the Morse Cr estuary. Currently this reach is severely compromised and enhancement will result in a improvement in the functionality of the anadromous zone of Morse Creek.</p> <p><b><u>Spatial/Temporal Scale of influence:</u></b>          The project could affect up to a mile of lower Morse Creek and the Morse Creek estuary and will compliment another .5 miles of habitat restored in 2010. Temporal scale is somewhat unknown until the feasibility study is complete and project approaches are identified.</p> <p><b><u>Address Timing Needs &amp; Sequencing Requirements:</u></b>          Tremendous efforts on the part of many partners have gone into a substantial floodplain reconnection project upstream of the 4 Season’s Ranch. Throughout 5 years of planning for that project, the partners have always said <i>“It is hoped that conducting this restoration project on state land will serve as a model for good project implementation, demonstrate positive outcomes and will lead to future opportunities on private lands in the two residential developments on Morse Creek.”</i>. An invitation to visit the 4 Season’s Ranch community came in 2009. Some members of the community feel there are a large number of residents who have been following the floodplain restoration efforts, attending public meetings and communicating with project partners who are ready to talk about possible restoration within</p>	
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	<p>their community. This opportunity must not be missed and momentum should be maintained. If restoration can be achieved in this reach, there will be only a small piece of un-restored creek between this reach and the floodplain reconnection project which took place in 2010. The reach between the two projects contains the Highway 101 bridge and a private road abutting the creek. Although it would be desirable to address the road and replace the bridge, these are elements of restoration that are not ripe for action, whereas the 4 Season’s Ranch project is. A feasibility study is the critical first step for determining what, if any actions will be possible in this complex community.</p> <p><b><u>Range of Estimated Cost:</u></b> Actual project costs are unknown at this time. However, as stated above, this feasibility study is critical to any efforts at restoration actions in this community.</p> <p><b><u>Watershed priority:</u></b> Morse Creek Watershed priority is set by the Lead Entity.</p> <p><b><u>Other Key information:</u></b> During 2010/2011, NOSC engaged in outreach to the community to assess their support for NOSC applying for funds for a feasibility study. The board of Four Season’s Ranch voted not to allow NOSC to pursue the feasibility study.</p>	
09027.1	<p><b>Siebert Creek Ecosystem Protection</b> (Phase I completed in 2007, Phase II funded in 2009)</p> <p><b><u>Project Description:</u></b> The goal of Phase III and IV is to conserve additional land along Siebert Creek through the following measures: (1) Extending the riparian buffer another river mile on the west side of the creek. The East side is already protected. The 200-acre property that contains the longest continuous reach of targeted riparian buffer is for sale and negotiations have started with a willing seller. If the land is not purchased for conservation it will be sold for development. Two marine feeder bluff properties will be protected with conservation easements in the project area. (2) Protection of another 1/3rd of a mile of the Creek, south of the existing protection accomplishments, working with another landowner who has been interested in conservation easements for quite some time.</p> <p>Siebert Creek is a significant independent drainage to salt water, entering the Strait of Juan de Fuca at Green Point. The Siebert Creek watershed includes 31.2 miles of mainstem stream and tributaries.</p> <p>Conservation easements are one of the most cost effective tools for the perpetual protection of land. This project will build upon the protection efforts completed and underway. Land in the Siebert Creek watershed is under the pressure of a growing population land conversion. We must seize the opportunity to protect the nearly pristine quality of the watershed while it is in good condition.</p> <p><b><u>Area Description:</u></b> (from_SALMON AND STEELHEAD HABITAT LIMITING FACTORS FOR WATER RESOURCE INVENTORY AREA 18. p 42)</p> <p>The Siebert Creek drainage is included as part of the Dungeness Area Watershed. The following information provides additional information specific to Siebert Creek. Siebert Creek is located approximately midway between Port Angeles and Sequim, draining an area of 19.5 mi<sup>2</sup> (17,200 acres). The creek is 12.4 miles long, draining directly to the Strait of Juan de Fuca (Williams et al. 1975). Siebert Creek drains the low hills paralleling the Strait of Jan de Fuca, and the upper reaches of the watershed are typically steep and incised at elevations up to 3,800 feet. Land in the upper watershed is managed for commercial forestry, with the extreme headwaters located in the Olympic National Park. The lower reaches contain both</p>	NOLT

	<p>moderate and low-gradient habitat, with land uses including commercial forestry, agriculture, and increasing levels of real estate development (McHenry et al. 1996).</p> <p><b><u>Why the Project is Needed (limiting factors addressed):</u></b>          The Assessment describes factors limiting the function of the watershed as degraded channel conditions, lack of LWD, and fine sediment in some areas of the watershed however the lower reach, which this project aims to protect, flows through a wooded ravine that is well vegetated and undisturbed with a 1 mile corridor protected with conservation easements. To guarantee greater ecological benefits, the entire 2 miles of the lower reach must be protected on both sides of the creek. Ecosystem processes and habitats are still functional and intact and therefore should be protected now.</p> <p><b><u>Benefits to Salmon:</u></b>          The project permanently protects habitat and ecosystem processes for multiple stocks including coho, cutthroat and steelhead.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this project meet and how?</u></b>          Puget Sound Recovery Plan – Protect Existing Physical Habitat and Habitat Forming Processes          WRIA 18 Watershed Plan – Protect the best habitat for multiple stocks          Siebert Creek Watershed Assessment - Protect intact ecological processes through conservation easements and property acquisitions.          NOPLE Recovery Strategy – Protect the best and maintain ecosystem function          Puget Sound Partnership – Protect habitat</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b>          Lower Siebert Creek is in relatively good condition. This could quickly change according to current zoning. The area will rapidly become developed unless properties are protected now.</p> <p>Marine Feeder bluffs in the drift cell that this project will permanently protect through conservation easements are important for maintaining ecosystem processes by delivering sediment to Dungeness Spit.</p> <p><b><u>Project’s Spatial-Temporal Scale of Influence:</u></b>          Two contiguous River Miles have been conserved, but additional protection is needed on the west side of the Creek. We also have the opportunity to conserve an additional 1/3<sup>rd</sup> of a mile beyond the existing corridor. This is conservation on a landscape scale.</p> <p><b><u>Certainly of Project Success:</u></b>          Landowners have expressed willingness. Successful funding will guarantee success. The County is interested in developing an Olympic Discovery Trail park on the 200-acre property and may contribute funding to this project.</p> <p><b><u>Address Timing Needs and Sequencing Requirements:</u></b>          An assessment of Siebert Creek has been completed and habitat protection is a recommendation in the assessment which is consistent with Pacific Woodrush’s vision which is to protect intact ecological processes of the Siebert Creek Corridor; in order to achieve this vision the following conditions and outcomes are desired: protection in perpetuity of naturally-functioning habitats through conservation easements and property acquisitions (Siebert Creek Watershed Assessment p. 8).</p> <p><b><u>Cost Appropriateness:</u></b>          Cost is based on the listing price of the property to be acquired fee simple. Cost to acquire development rights through conservation easements is based on comparable values of recently appraised conservation easements.</p> <p><b><u>Watershed Priority and watershed area:</u></b></p>	
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	<p>WRIA 18, Watershed Priority 2.20.</p> <p><b><u>Other Key Information (especially any relationship to previous or current projects):</u></b>          In 2002 an effort to protect the lower 2 miles of Siebert Creek was initiated by Pacific Woodrush and North Olympic Land Trust to protect the lower reach of the watershed from the estuary to Highway 101. Siebert Creek Ecosystem Protection started with Phase 1. One mile of Siebert Creek was protected with permanent conservation easements including the estuary. 50 acres were protected with conservation easements and a 33-acre property was purchased. With Phase II, 26 additional acres will be conserved along Siebert Creek, and 2 contiguous river miles will be protected.</p>	
09028.1	<p><b>Siebert Creek Hwy 101 Fish Passage Restoration</b></p> <p><b><u>Watershed Priority:</u></b> 2.20</p> <p><b><u>Project Description:</u></b>          The Hwy 101 box culvert at river mile 2.4 is a serious, partial barrier to 1) upstream fish passage and 2) the downstream transport of large wood. Fish passage and large wood transport will be restored by removing the culvert and replacing it with full-spanning bridge.</p> <p><b><u>Why the Project is needed (limiting factors addressed):</u></b>          Siebert Creek's anadromous length is approximately 10 miles, but fish passage is severely impaired at river mile 2.4 by the Hwy 101 box culvert. The culvert is equipped with a sub-standard fishway that provides, at best, partial fish passage. The culvert is too small to accommodate an efficient fishway, and the large amount of bedload transported by Siebert Creek makes fishway maintenance very problematic. The project will remove the box culvert and replace it with a bridge to restore unimpeded fish passage to prime spawning and rearing habitat upstream for Puget Sound steelhead, coho, and coastal cutthroat. Due to its small size, the culvert also hinders the downstream transport of large wood, thereby depriving the lower 2.4 miles of Siebert Creek of this important habitat-forming material.</p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b>          Siebert Creek steelhead and coho stocks are both imperiled. The project addresses this condition by opening approximately 75% (7.6 miles) of the stream's anadromous habitat to unimpaired accessibility for both stocks. The project will also produce habitat benefits to the lower 2.4 miles of Siebert Creek by restoring the downstream transport of large wood. This culvert is the last anthropogenic impediment to fish passage in Siebert Creek.</p> <p><b><u>Specific Salmon and Char Stocks that will benefit.</u></b>  <b>ESA-listed:</b> Puget Sound steelhead. <b>Non-listed:</b> Coho, cutthroat.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          The Siebert Watershed Analysis calls for replacement of the culvert with a bridge (2004, Siebert Technical Advisory Group). WRIA 18 Watershed Report: Correct fish passage problems at Highway 101 by replacing the existing culvert crossing with a bridge, as recommended by WDFW.</p> <p><b><u>Restores Formerly Productive Habitat:</u></b>          The project restores unimpaired fish access to approximately 75% of the stream's anadromous habitat. The restoration of large wood transport will produce habitat benefits to Siebert Creek's lower 2.4 miles.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b>          Ecosystem functions are restored by: 1) Restoring unimpaired fish migration into approximately 75% of the stream's anadromous habitat. This will benefit the fish stocks and</p>	JSKT/ WSDOT

	<p>their predators, and the increased import of ocean carbon and other nutrients represented by increased numbers of fish carcasses will provide benefits to a large number of plants and animals. 2) Restoring large wood transport past Hwy 101 will improve aquatic habitat conditions in the stream's lower 2.4 miles. 3) The Hwy 101 road fill is a very significant barrier to the movement of mammals, reptiles, and amphibians. Replacement of the culvert and road fill with a full spanning bridge will restore the migration corridor for a multitude of creatures.</p> <p><b>Scale of influence:</b>  <b>Spatial-</b> The project will provide benefits throughout the entire 10 miles of anadromous habitat, especially the 7.6 miles upstream of Hwy 101. <b>Temporal -</b> Life span of the bridge would likely equal or exceed 70 years. It's unlikely that another structure that obstructs fish migration and large wood transport would ever be permitted in the future. Therefore, the project benefits can reasonably be considered permanent.</p> <p><b>Certainty of Project Success:</b>  The eastbound lanes of Hwy 101 currently cross Siebert Creek on a full-spanning bridge, which does not hinder the movement of large wood, fish, or other animals. Replacing the road fill and culvert on the westbound lanes with a similar bridge will unquestionable eliminate the existing impacts.</p> <p><b>Timing Needs &amp; Sequencing Requirements (project readiness):</b>  The project will begin with a design project: conceptual bridge and site design to 10% engineering. Once the design is in place, then the project can be placed on the DOT project list.</p> <p><b>Cost Range and Appropriateness:</b>  Estimated cost range of the 10% design is \$75,000 to \$150,000. The full project will cost approximately \$12 to \$15 million. It is expected that most of the cost will be covered by the WSDOT as a highway improvement/maintenance or mitigation project.</p> <p><b>Other Key Information, especially any relationship to previous or current projects:</b>  A similar culvert removal/bridge construction project was completed in the 1990's by Clallam County downstream at Old Olympic Highway. The Lower Elwha Tribe has placed numerous pieces of LWD below Old Olympic Highway, greatly improving habitat condition. The North Olympic Land Trust owns several properties and conservation easements on lower Siebert Creek.</p>	
11090	<p><b>Siebert Creek Large Wood Restoration</b></p> <p><b>Watershed Priority:</b> 2.20</p> <p><b>Project Description:</b>  Construct design/build logjams (DBLJ's) in Siebert Creek from the mouth to RM 2.4 at the Highway 101 box culvert. Work will be accomplished in a series of construction phases occurring from 2012 to 2015. A combination of ground-based and helicopter placement techniques will be employed depending on access and landowner agreements.</p> <p><b>Why the Project is needed (limiting factors addressed):</b>  Riparian conditions and habitat quality downstream of SR 101 have been cited numerous as limiting factors for salmon recovery in Siebert Creek (McHenry 1992, as referenced in McHenry et al. 1996, Bernthal and Rot 1999). The box culvert at SR 101 further exacerbates the downstream transport of large wood from upstream areas of the creek with more mature forest cover. The WRIA 18 LFA references the above studies by reporting pool percentage ratings of fair to poor with critically low levels of LWD, and recommends developing and implementing a short-term LWD strategy in lower Siebert Creek to restore LWD presence and</p>	JSKT

	<p>pools, particularly from the mouth to SR 101 (WRIA 18 Watershed Plan, page 3.12-7). More recent survey data generated from habitat mapping (pool/log jam locations) is being used to prioritize restoration projects (Siebert Creek Watershed Assessment, Hagen and Erickson 2004 and Tribal habitat surveys conducted by the Jamestown and Lower Elwha Klallam Tribes, 2003 and 2010 unpublished survey data).</p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b>          This project will return stable, complex salmonid spawning and rearing habitat to lower Siebert Creek, by scouring pools, stabilizing spawning riffles, retaining salmon carcasses, providing cover, and encouraging the access of the creek to its floodplain. Besides the immediate benefits provided by the DBLJ's, the project will recreate the channel structure necessary to allow the retention of naturally recruiting wood. Tribal survey data collected in 2003 and 2010 shows long plane-bed channel form reaches below the SR 101 culvert that are devoid of wood, scoured to bedrock or have large substrate not conducive to salmon spawning. Channel reaches downstream of Old Olympic Highway restored by the Lower Elwha Klallam Tribe in 2005 are showing signs of recovery based on survey data the tribes collected this past summer (2010). Future wood recruitment is incorporated by conifer under-planting in the floodplain with each restoration project.</p> <p><b><u>Specific Salmon and Char Stocks that will benefit.</u></b>  <b>ESA-listed:</b> Puget Sound steelhead <b>Non-listed:</b> Coho, cutthroat</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          NOPLE 2011 Draft Strategy Table D: Restore habitat. While the recovery plan for steelhead is not available, it undoubtedly will include recover steelhead habitat by placing LWD. WRIA 18 LFA page 3.12-7, "Develop and implement a short-term LWD strategy in lower Siebert Creek to restore LWD presence and pools, particularly from the mouth to SR 101". Siebert Creek Watershed Assessment recommendations (2004) "Restore natural levels of instream large woody debris (LWD) by: direct placement of LWD and restoration of mature riparian forest to provide long-term recruitment of LWD".</p> <p><b><u>Restores Formerly Productive Habitat:</u></b>          Siebert Creek historically supported coho and chum salmon, steelhead, cutthroat, and rainbow trout, and Dolly Varden. According to the LFA analysis, the loss of large wood is one of the primary limiting factors. Until the comprehensive fixes at HWY 101 occur, constructing DBLJ's will provide a near-term restoration opportunity for the impaired reaches downstream of the SR 101 culvert. It also serves as an immediate mechanism to reestablish habitat forming processes in the channel until riparian forest cover has a chance to naturally recover.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b>          Restoring large woody debris jams below SR 101 will improve aquatic habitat conditions in the streams lower 2.4 miles. Mapping of habitat features such as pools, jams, and riffles by the JSKT and LEKT in this area clearly show a need and justification for restoration projects. The three-tiered restoration approach that JSKT employs is designed to restore ecosystem functions to a level that supports salmon recovery. Floodplain forest restoration through controlling invasive species and reestablishing conifer, coupled with installing DBLJ's where they are needed is the approach we use to restore ecosystem functions.</p> <p><b><u>Scale of influence:</u></b>  <b>Spatial-</b> This project will cover approximately 2.4 miles, from SR 101 down to the estuary. Monitoring data collected in the last 7 years will help prioritize log jam locations where they are needed most. The stream is low gradient (1-2%) and unconfined through this reach, with good floodplain habitat on both banks. <b>Temporal</b> - We can expect the conifer wood used in these logjams to last 20-50 years depending on whether they are mostly wet or wet/dry. The existing alder in the riparian forest will provide good habitat in the coming decades, however alder decays in a matter of a decade. The key is conifer replanting and re-growth to create the type of riparian habitat that creates stable salmonid habitat.</p>	
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	<p><b><u>Certainty of Project Success:</u></b>                  The Jamestown S’Klallam Tribe completed a successful DBLJ project on McDonald Creek downstream of Old Olympic Hwy (Phase I), building 8 logjams. We will build in 2011 a similar number of logjams in the ¼ mile downstream of Phase I. Monitoring data collected in 2003 resulted in a successful restoration project downstream of Old Olympic Highway by the LEKT in 2005. It is likely that the JSKT will partner with the LEKT on this project. The tribes worked together this last summer to repeat the 2003 habitat survey which mapped all the jam locations from the mouth to SR 101. Our experience in other watershed supports a high certainty of success in Siebert Creek. We installed over 700 pieces of wood in the Jimmycomelately Creek restoration project in Sequim Bay. In the Dungeness River, we have constructed design/build logjams below Woodcock Bridge (RM 2.9), upriver of Hwy 101 in the main river (RM 6.6), in Dawley side channel (RM 6.7), and downstream of the Powerlines (RM 8.3).</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>                  The JSKT is again working with the WADNR to secure wood donations from State Lands timber sales in the Siebert Creek, and other adjacent watersheds for in-stream restoration projects. Depending on funding availability, the tribe could be ready to implement restoration projects in the summer of 2012.</p> <p><b><u>Cost Range and Appropriateness:</u></b>                  To construct logjams in the lower 2.4 miles of Siebert Creek will cost between \$250,000 to \$300,000. This figure assumes we would be working along the entire 2.4 mile reach between SR 101 and the estuary. The project can be scaled back or sequenced depending on available funding by prioritizing restoration locations based on monitoring data.</p> <p><b><u>Other Key Information, especially any relationship to previous or current projects:</u></b>                  As mentioned earlier, Siebert Creek has been fairly well studied compared with other central straits drainages. Monitoring data has been compiled and analyzed with an eye to getting the most restoration benefit from conservation dollars. This project would complement the HWY 101 fish passage project by restoring the most heavily impacted areas of the creek below this barrier. As mentioned earlier, a successful logjam project was completed downstream of Old Olympic Highway by the LEKT in 2005.</p>	
10078.1	<p><b>McDonald Creek Large Wood Restoration</b></p> <p><b><u>Watershed Priority:</u></b> 2.32</p> <p><b><u>Project Description:</u></b>                  Construct design/build logjams (DBLJ's) in McDonald Creek from the mouth to RM 5.2 at the confluence with Pederson Creek. Plant native conifers in project area where needed. Work will be accomplished in a series of construction phases occurring from 2011 to 2015. We are currently working on Phase II downstream of Old Olympic Hwy. Planning for Phase III just upstream of Old Olympic Hwy will begin shortly.</p> <p><b><u>Why the Project is Needed (limiting factors addressed):</u></b>                  The last habitat survey was over a decade ago and found that pool frequency and number of key pieces of LWD that would anchor logjams were in poor condition (Bernthal and Rot 2001). The WRIA 18 LFA recommended that LWD be restored from the mouth to RM 4.9 (Haring 1999). Haring 1999 lists the riparian condition as good condition, however the source he cited only surveyed the watershed above RM 4.9. The lower watershed has been logged several times and is dominated by young to mature red alder with very little conifer in the understory, or at best a mixed alder/conifer forest (Rot, personal observation).</p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b>                  This project will return stable, complex salmonid spawning and rearing habitat to McDonald</p>	JSKT

<p>Creek, by scouring pools, stabilizing spawning riffles, retaining salmon carcasses, providing cover, and encouraging the access of the creek to its floodplain. Besides the immediate benefits provided by the DBLJ's, the project will recreate the channel structure necessary to allow the retention of naturally recruiting wood. Future wood recruitment is being ensured by numerous completed and planned riparian habitat purchases and conservation easements, along with conifer under-planting with each restoration project.</p> <p><b><u>Specific Salmon and Char Stocks that will Benefit:</u></b>  <b>ESA-listed:</b> Puget Sound steelhead. <b>Non-listed:</b> coho, fall chum (likely extirpated), cutthroat.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          NOPLE 2011 Draft Strategy Table D: Restore habitat. While the recovery plan for steelhead is not available, it undoubtedly will include recover steelhead habitat by placing LWD. WRIA 18 LFA page 124, restore LWD presence and function from the mouth to Pederson Creek (RM 5.2).</p> <p><b><u>Restores Formerly Productive Habitat:</u></b>          McDonald Creek has a historical productivity rating of 3 (of a possible 5). Current productivity rating is 2. According to the LFA analysis, the loss of large wood is one of the primary limiting factors.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b> Olympic Peninsula streams and rivers and their salmonid populations evolved with extremely high levels of instream large wood. Wood provides physical fish habitat, serves as a biological substrate, roughens stream channels to scour pools and stabilize spawning habitat, and aggrades channel beds so these systems interact with their floodplains. In McDonald Creek, channel grade in the lower 5 miles averages 1-2% (Bernthal and Rot 2001). Where wood is deficient, cobble sized substrate is common. By building stable logjams and replanting conifer riparian forest, the ecosystem processes of habitat formation and nutrient processing can resume at levels appropriate for salmon recovery.</p> <p><b><u>Scale of influence:</u></b>  <b>Spatial</b> - The project will cover approximately 5 miles, which is the entire anadromous zone. McDonald Creek is incised into the surrounding glacial till, the stream corridor is undeveloped with the exception of two road stream crossings and the Agnew irrigation outtake. <b>Temporal</b> – We can expect the conifer wood used in these logjams to last 20-50 years depending on whether they are mostly wet or wet/dry. The existing alder in the riparian forest will provide good habitat in the coming decades, however alder decays in a matter of a decade. A key element is conifer replanting and regrowth to create the type of riparian habitat that creates stable salmonid habitat.</p> <p><b><u>Certainty of Project Success:</u></b>          The Jamestown S’Klallam Tribe completed a successful DBLJ project downstream of Old Olympic Hwy (Phase I), building 8 logjams. We will build in 2011 a similar number of logjams in the ¼ downstream of Phase I. The McDonald stream corridor is virtually undeveloped, which removes a big hurdle with landowners. Our experience in other watershed supports a high certainty of success in McDonald Creek. We installed over 700 pieces of wood in the Jimmycomelately Creek restoration project in Sequim Bay. In the Dungeness River, we have constructed design/build logjams below Woodcock Bridge (RM 2.9), upriver of Hwy 101 in the main river (RM 6.6), in Dawley side channel (RM 6.7), and downstream of the Powerlines (RM 8.3).</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>          We are in the midst of restoration. Phase II will be completed the summer of 2011 (already funded). Funding for Phase III is still needed, construction will occur in 2012.</p> <p><b><u>Cost Range and Appropriateness:</u></b></p>	
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	<p>To construct logjams in the entire lower 5 miles will cost between \$750,000 to \$1 million. This will recover habitat in the entire range of ESA listed winter steelhead.</p> <p><b><u>Other Key Information especially any relationship to previous or current projects:</u></b> As stated above, we have a plan for McDonald Creek recovery and are implementing the plan.</p>	
09039.2	<p><b>McDonald Creek Barrier Removal and Channel Restoration</b></p> <p><b><u>Watershed Priority:</u></b> 2.32</p> <p><b><u>Project Description:</u></b> The project will restore safe, unimpeded upstream and downstream fish passage conditions at the Agnew Irrigation District water diversion facility by simply removing the entire facility from the stream. Upstream of the facility, 4.5 miles of coho habitat and 6.1 miles of steelhead and cutthroat habitat will be made freely accessible. Concurrent with barrier removal, the adjacent 400 feet of degraded stream channel will be restored. The project will also result in the cessation of Dungeness River discharges into McDonald Creek, which will eliminate the potential for Dungeness River salmon to be attracted into McDonald Creek. The conveyance of stormwater into McDonald Creek via the Agnew Irrigation ditch system will also be eliminated. The project will be accomplished by 1) constructing a new upland ditch/pipeline system to replace the existing instream irrigation facility, 2) removing from McDonald Creek the Agnew diversion dam, head gate, canal, bypass, and fish screen, and 3) restoring the degraded channel and floodplain downstream of the diversion dam and under the Hwy 101 bridge.</p> <p><b><u>Why the Project is Needed (limiting factors addressed):</u></b> A 5-foot high irrigation diversion dam, equipped with a small and intermittently functional steep-pass fishway, spans McDonald Creek. An irrigation canal, water and fish bypasses, and a fish screen occupy the Creek's floodway, severely constricting the channel. This irrigation facility causes numerous fish passage, habitat, and biological problems:</p> <ul style="list-style-type: none"> <li>• The fishway only functions when 1) it's free of debris, 2) conveys the proper amount of water, and 3) discharges into a suitable attraction area. During much of the year these conditions are not met, and upstream adult and juvenile fish migration is blocked. 4.5 Miles of coho habitat and 6.1 miles of steelhead and cutthroat habitat can be inaccessible to fish. Even when technically functioning, the fishway provides little attraction flow and adult fish can harm themselves leaping at the dam.</li> <li>• Fish cannot migrate safely downstream through the facility. Fish migrating over the dam or through the water diversion will fall onto riprap. The fish bypass cannot safely convey adult steelhead and an unknown percentage of fry will invariably pass through the fish screens and be lost.</li> <li>• Currently the Agnew Irrigation District uses McDonald Creek as a part of its irrigation water conveyance system. Water diverted from the Dungeness River is discharged into McDonald Creek at RM 5 and then at RM 3.2 an approximately equal of water is withdrawn from the Creek. Mixing Dungeness River water into McDonald Creek creates the potential that Dungeness River fish will be attracted into McDonald Creek for spawning, thereby harming fish populations from both streams.</li> <li>• Before discharging into McDonald Creek, the Agnew Irrigation District's ditch traverses about 6 miles of hillsides on its way from the Dungeness River. In various locations the ditch intercepts stormwater, which is then conveyed to McDonald Creek. By ceasing discharges into the Creek, this stormwater impact will be eliminated.</li> <li>• The irrigation facility's constricting of the channel has caused the stream to down-cut 3 feet and become heavily armored with cobbles, boulders, and riprap migrating from the dam. These 400 feet of stream are very habitat poor and fish-unfriendly.</li> </ul>	<p>JSKT, WDFW, WSDOT, Agnew Ditch Co.</p>

	<p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b>          Some of McDonald Creek’s best fish habitat - 4.5 miles for coho and 6.1 miles for steelhead and cutthroat - is found upstream of the diversion dam. These fish spawn and rear both upstream and downstream of the diversion dam. Fish are often blocked from migrating upstream and fish can migrate downstream only by falling onto riprap or sliding through a small-diameter, steep pipe. Both can potentially injure or kill fish. The fully implemented project will 1) remedy fish passage problems, 2) restore habitat and habitat forming processes in the adjacent stream channel, 3) eliminate the attraction of Dungeness River fish into McDonald Creek and 4) eliminate irrigation ditch stormwater impacts to McDonald Creek. Overall, stock status will be significantly improved by this work.</p> <p><b><u>Specific Salmon and Char Stocks that will Benefit:</u></b>  <b>ESA-listed:</b> Puget Sound steelhead. <b>Non-listed:</b> coho, fall chum (likely extirpated), cutthroat.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          NOPL 2011 Draft Strategy Table D: Restore habitat. While the recovery plan for steelhead is not available, it undoubtedly will include measures to recover steelhead habitat by removing the diversion dam and the influence of Dungeness River water. WRIA 18 LFA page 124, “identify options to reduce/eliminate the influence of Dungeness River water, conveyed through the irrigation system, on homing ability of Dungeness and McDonald origin salmonids”.</p> <p><b><u>Restores Formerly Productive Habitat:</u></b>          McDonald Creek has a historical productivity rating of 3 (of a possible 5). Human impacts have driven its productivity rating down to 2. The diversion dam and instream irrigation facility are one of the primary anthropogenic stressors responsible for the decrease in productivity. Upstream of the diversion dam, instream habitat is very intact and the project will restore unimpeded fish access into this prime habitat and also provide safe migration conditions for adult and juvenile fish moving downstream. The project also eliminates the mixing of Dungeness River water into McDonald Creek and removes the irrigation system as a source of stormwater runoff entering the stream. In some downstream areas large wood depletion is another stressor. The Jamestown S’Klallam Tribe is addressing this problem with one large wood recovery project complete and another being planned and already funded.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b>          Restoring unimpeded fish passage to a large percentage of the anadromous watershed is crucial and elemental to restoring ecosystem functions. Restoring instream habitat, reducing stormwater impacts, and eliminating the potential for attracting Dungeness River salmon into McDonald Creek also improve ecosystem functions in this stream.</p> <p><b><u>Scale of influence:</u></b>  <b>Spatial</b> – The project’s spatial scale of influence is extremely large. The project is located at roughly RM 3.2. Upstream, unimpeded fish passage will be restored to 4.5 miles of coho habitat and 6.1 miles of steelhead and cutthroat habitat. <b>Temporal</b> – The project’s benefits are perpetual.</p> <p><b><u>Certainty of Project Success:</u></b>          Certainty of success is very high. The offending impacts will be fully removed from the stream. Design work is underway and expected to be completed by early 2013.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>          The project is expected to be poised for construction beginning in 2013 or 2014, depending upon the availability of funding and approval from Agnew Irrigation District. First, the upland water conveyance system must be built to replace the instream facility. Next the instream facility can be removed, and then the adjacent stream channel can be restored.</p>	
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	<p><b>Cost Range and Appropriateness:</b> Cost estimates will be available in early 2013.</p> <p><b>Other Key Information especially any relationship to previous or current projects:</b> The project supports and integrates well with previously accomplished and currently planned large wood recovery projects in downstream areas.</p> <p><b>Photos and Graphics are available for viewing at:</b> <a href="http://hwsconnect.ekosystem.us/Project/180/6666">http://hwsconnect.ekosystem.us/Project/180/6666</a></p>	
13104	<p><b>3 Crabs Nearshore and Estuarine Restoration</b></p> <p><b>Project Title and Description:</b> The project site is located on Dungeness Bay and contains Meadowbrook Creek, the last freshwater tributary to the Dungeness River. The goals of this project is to enhance fish and wildlife habitat by: removing anthropogenic stressors, recreating lost wetlands and improving connectivity among more than 40 acres of nearshore, river delta, estuarine and riparian habitats. This project will eliminate a tidal and freshwater restriction, reconnect floodplain habitat, recreate historic estuarine wetlands, removal of toxic creosote, restore natural sediment transport processes, increase public access, improve water quality, and reduce flooding.</p> <p>The project site was filled and armored beginning in the 1950's, creating a "hard point" that has interfered with nearshore sediment transport. The 3 Crabs Restaurant was built on top of the nearshore fill and was in operation from 1958 until it was acquired by WDFW in 2012. Restoration actions to be designed for include: 1) demolishing and removing all structures, septic and utilities associated with the restaurant, 2) removal of dike and bank armoring from Meadowbrook Creek, 3) removal and re-contouring of ~5 acres of estuary fill to historic salt marsh, dune and intertidal elevations, 4) removal of a nearshore groin, 5) removal of nearshore armoring 5) rerouting of utilities underneath the project site to New Dungeness Light Station, 6) removal of ~165 creosoted pilings from the nearshore associated with a derelict wharf, 7) removal of ~ 10 Tons of beached creosote debris from the nearshore and Meadowbrook Creek Estuary and the Dungeness River Delta. 8) removal of an undersized creosote bridge, 9) relocation of a road intersection ~750 feet away from the shoreline, 10) removal of road fill diking from the nearshore and Meadowbrook Creek Estuary, 11) realignment of Meadowbrook Creek to reconnect floodplain habitat and 12) construction of a new bridge to restore estuarine marsh processes and allow meandering of Meadowbrook Creek. When completed, the proposed restoration actions will restore sediment transport processes to the Dungeness Bay drift cell, in addition to restoring habitat and removing freshwater and tidal flow restrictions to improve connectivity to over 40 Acres of wetlands between Meadowbrook Creek and the Dungeness River Delta.</p> <p><b>Why the Project is Needed (limiting factors to be addressed):</b> Floodplain Modification, Channel Condition, Riparian Condition, Water Quality/Quantity, Biological Processes, Estuarine, Shoreline Armoring, Loss of Intertidal/Nearshore Vegetated Habitat identified in the WRIA 18 LFA as limiting factors.</p> <p><b>Benefit to Salmon (how does it address stock status &amp; trends?) Which ESA-listed stock and/or non-listed stock does this project address?</b> Meadowbrook Creek is the last freshwater tributary to out-migrating salmon species in the Dungeness River before entering Dungeness Bay. Estuarine areas in the vicinity of the project site are heavily used by juvenile chum and chinook salmon. This project will be of particular benefit to chinook and chum as connectivity and quality of preferred transitional rearing habitats are improved. This work is part of the continuing effort to restore the floodplain, estuarine and nearshore habitat of the lower Dungeness River and increase available migratory, rearing and transitional habitat for salmonids, including ESA-listed Puget Sound</p>	NOSC

	<p>Chinook, Eastern Strait of Juan de Fuca-Hood Canal Summer Chum, Puget Sound Steelhead and Puget Sound Bull Trout.</p> <p><b><u>Which Salmon Recovery Plan Objectives does this Project Meet &amp; How?</u></b>          Specific goals stated in the North Olympic Lead Entity for Salmon Strategy that the project will address include:  <u>Goal 1: Achieve robust fish stocks</u> - this project will contribute to greater juvenile production, especially for Chinook and chum  <u>Goal 2: Implement recovery plans and protect and restore fish habitat</u> - this project implements the following elements of the NOPL 2011 Dungeness Strategy and the Dungeness Chapter of the Puget Sound Chinook Recovery Plan.          1) Restoration of the lower river floodplain and delta to increase the quantity of essential rearing and salt/freshwater transition habitat, 2) Restoration of Functional Riparian and Riverine Habitat to improve the quality of riparian habitat and function, including temperature moderation, long-term recruitment of LWD, cover, food production, etc.          3) LWD Placement 4) Nearshore Habitat Protection and Restoration to improve the quantity and quality of estuarine and nearshore habitat and 5) Water Quality Improvement by removing a potentially contaminating commercial septic tank.  <u>Goal 3: Restore and maintain ecosystem function and nearshore processes</u> - <u>Objective:</u> Focus on protection and restoration of habitat forming process. This project restores ecosystem function to a nearly 40 acres of estuarine wetland and 500 LF of shoreline.  <u>Goal 4: Instill ecosystem awareness:</u> The project will occur at a WDFW wildlife viewing area and interpretive kiosks and educational programs will provide opportunities to inform ecosystem awareness with regard to restoration.  <u>Goal 5: Integrate efforts:</u> The project partners include NOSC, WDFW, WDNR, JSKT and CCD. The project will be shared through two statewide databases, the Habitat Work Schedule and Prism.</p> <p><b><u>How Project supports Restoration or Protection of Ecosystem Functions? (Does it protect high quality fish habitat or restore formerly productive habitat? Does it support restoration and maintenance of ecosystem functions?)</u></b>          The project will remove anthropogenic stressors and restore critical habitat by recreating lost wetlands and improving connectivity between nearshore, river delta, estuarine and riparian habitats. Following completion of this project estuarine and nearshore processes will be significantly less encumbered by infrastructure and will be more capable of dynamically adapting to change.</p> <p><b><u>Address the project’s spatial-temporal scale of influence:</u></b>          The project will remove fill and infrastructure to reduce flood hazards, improve habitat and increase resiliency of the site for potential effects of climate change. Ecological processes will be restored to long-shore drifting sediments in Dungeness Bay and more than 40 acres of estuarine and riparian wetlands. This project will improve habitat connectivity for outmigrating salmonids from the entire Dungeness River system.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>          The project is ready to begin. The landowner (WDFW) is eager for this project to proceed. As soon as funding is acquired, the restoration elements can be designed, permitted and constructed. Following the submittal of a pre-proposal, the project was requested to submit a full application to the Washington Estuary &amp; Salmon Restoration Program. Should this project advance in ESRP additional match funding will be needed.</p> <p><b><u>Range of Estimated Cost:</u></b>          2.5-\$4,000,000 depending on whether or not the roadway is relocated. Cost estimate is a rough approximation until design work is completed.</p> <p><b><u>Watershed priority &amp; watershed area or which WRIA Nearshore project is located in:</u></b>          WRIA 18. Dungeness River/Meadowbrook Creek.</p>	
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	<p><b>Other Key Information, especially any relationship to previous or current projects:</b>                  Over 550 Acres of the Lower Dungeness Watershed have been conserved. Multiple restoration actions are recently completed or currently underway by project partners in the Lower Dungeness including floodplain restoration, levee setback and estuarine restoration efforts. Now that WDFW has acquired the long sought after 3 Crabs Restaurant property, NOSC will manage the 3 Crabs Nearshore and Estuarine Restoration Project, in addition to receiving transfer of SRFB Grant #11-1343 (Meadowbrook Creek and Dungeness River Reconnection) from Clallam Conservation District to complement restoration approaches and achieve integrated watershed scale process-based restoration at the project site.</p> <p><b>Photos and Graphics are available for viewing at:</b>  <a href="http://hwsconnect.ekosystem.us/Project/180/18257">http://hwsconnect.ekosystem.us/Project/180/18257</a></p>	
09029.1	<p><b>Dungeness River Large Wood Restoration</b></p> <p><b>Watershed Priority:</b> 4.76</p> <p><b>Project Description:</b>                  Build approximately 50 engineered and design/build logjams (ELJ's and DBLJ's) in the Dungeness River from river mile (RM) 2.7 to 18.8 and in the Gray Wolf River from RM 0.0 to 2.0. Work will be accomplished in a series of design and construction phases occurring from 2010 to 2019.</p> <p><b>Why the Project is Needed (limiting factors addressed):</b>                  Dungeness River channel structure and complexity have been severely harmed by decades of extensive large wood removal projects. From the 1950's to 1982, the near annual "log drives" piled and burned river wood to keep the channel neat and tidy. Significant removal of wood ceased in 1982, but the channel still needs stable logjams to retain the size-classes of wood that recruit into the system today. Meanwhile, the system is extremely lacking in large deep pools and stable spawning habitat.</p> <p><b>Benefit to Salmon (how does it address stock status &amp; trends):</b>                  Return stable, complex salmonid spawning and rearing habitat to the mainstem Dungeness and lower Gray Wolf Rivers, by scouring pools, stabilizing spawning riffles, retaining salmon carcasses, providing cover, and engendering the formation of side channels. Besides the immediate benefits provided by the ELJ's and DBLJ's, the project will recreate the channel structure necessary to allow the retention of naturally recruiting wood. Future wood recruitment will be ensured by riparian habitat acquisition, conservation easements, and riparian restoration.</p> <p><b>Specific Salmon and Char Stocks that will Benefit.</b>  <b>ESA-listed:</b> Puget Sound Chinook, Puget Sound steelhead, Hood Canal/Eastern Strait of Juan de Fuca summer chum, Coastal-Puget Sound bull trout. <b>Non-listed:</b> coho, pinks, fall chum, cutthroat.</p> <p><b>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</b>                  NOPLE 2011 Draft Strategy Table C: Recommended actions for Dungeness River - "LWD Placement". "Develop and implement a short-term LWD strategy to provide LWD presence and habitat diversity until full riparian function is restored." WRIA 18 LFA page 105. Restore LWD from RM 0.9 to Hwy 101. Puget Sound Recovery Plan, page 325.</p> <p><b>Restores Formerly Productive Habitat:</b>                  The Dungeness River has a historical productivity rating of 5 (of a possible 5). Current productivity rating is 2. According to the EDT analysis, the loss of large wood is one of the primary factors for the decline in productivity.</p>	JSKT/ CC

	<p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b> Olympic Peninsula rivers and their salmonid populations evolved with extremely high levels of instream large wood. Wood provides physical fish habitat, serves as a biological substrate, and roughens stream channels to scour pools and stabilize spawning habitat. Rivers damaged by serious loss of stable, large wood lose these beneficial attributes and also become unable to efficiently retain newly recruited wood and salmon carcasses. By providing stable logjams, the ecosystem processes of habitat formation and nutrient processing can resume at levels appropriate for salmon recovery.</p> <p><b><u>Scale of influence:</u></b>  <b>Spatial</b> - The project will cover approximately 18 miles of mainstem river. <b>Temporal</b> - Although some DBLJ structures may move during floods, the engineered logjams will last 50 years or more. By capturing recruited wood, by stabilizing bars and channels to allow the creation of forested islands, and forcing flows into side channels, the benefits of the project will persist beyond the life of the individual wood jams.</p> <p><b><u>Certainty of Project Success:</u></b>  The Jamestown S’Klallam Tribe has completed a successful ELJ project near RR Bridge (RM 5.2 to 6.0). We have also constructed design/build logjams below Woodcock Bridge (RM 2.9), upriver of Hwy 101 in the main river (RM 6.6), in Dawley side channel (RM 6.7), and downstream of the Powerlines (RM 8.3).</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>  Because of its large size and the numerous landowners involved, the project must be undertaken as a series of design and construction phases. Seven ELJ’s have been built in the RM 5.2 to 6.0 reach. Several more ELJ’s will be built when a SRFB-funded acquisition is completed. A habitat restoration/public outreach project for the Hwy 101 to the Fish Hatchery reach is underway. The Upper Dungeness and Lower Gray Wolf LWD project, which targets Chinook, Upper River pink and steelhead habitat, has been funded for design work. The project can be considered ongoing and eminently ready.</p> <p><b><u>Cost Range and Appropriateness:</u></b>  The entire project will cost about \$5 million. Lessons learned from the RM 5.2 to 6.0 ELJ projects will enable the Tribe to maximize the cost appropriateness of this project.</p> <p><b><u>Other Key Information especially any relationship to previous or current projects:</u></b>  The project integrates extremely well with numerous habitat protection and stream flow conservation projects previously completed on the Dungeness River.</p>	
09030.1	<p><b>Dungeness River Riparian Habitat Protection</b></p> <p><b><u>Watershed Priority:</u></b> 4.76</p> <p><b><u>Project Description:</u></b>  The project will protect many previously identified Dungeness River riparian properties downstream of DNR ownership (approximately river mile 12.0) through the purchase of property and conservation easements. High quality riverine forest habitat, particularly those areas with side channels, is a priority for protection. Also included for acquisition are properties needed for flood plain restoration projects, an especially high priority on the Dungeness River. The project’s goal is to purchase fee simple titles and conservation easements on approximately 160 acres and about 4 miles of river channel in 8 years. The project will be undertaken as a series of annual phases.</p> <p><b><u>Why the Project is needed (limiting factors addressed):</u></b>  The project addresses four limiting factors: protecting functional side channels, preventing</p>	JSKT, WDFW, NOLT

	<p>floodplain modifications, protecting water quality by maintaining off-channel habitat and functional floodplains, and protecting riparian forests. The lower Dungeness Valley is being rapidly developed for residential use. However, high quality riverine forests still exist and must be protected while the opportunity remains. Experience has shown that because of weak standards, non-compliance and the issuance of variances, land use regulations have not adequately protected Dungeness River fish habitat. Downstream of RM 12 dikes, levees and other attempts to control the river have degraded vital spawning, rearing, and foraging habitat for salmon and char. In the diked and armored sections, the natural process of stream channel movement, habitat formation, flood plain processes, and sediment transport are severely impaired or eliminated. Elsewhere, homes continue to be built within the channel migration zone and vegetation is sometimes cleared virtually to the riverbank. Relocating dikes and other infrastructure requires the purchase of affected properties or easements. The Ecoregional assessment by WDFW and the Nature Conservancy rated Dungeness highest for conservation value and vulnerability for both species and landscape weighted rankings (March 2004).</p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b>          The project will permanently protect and/or enable restoration on approximately 160 acres of high quality riverine forest and associated instream habitat and areas needed for flood plain restoration projects. These acres will include about 4 miles of river channel. Protection will far exceed the requirements of current land use regulations.</p> <p><b><u>Specific Salmon and Char Stocks that will benefit.</u></b>  <b>ESA-listed:</b> Puget Sound Chinook, Puget Sound steelhead, Hood Canal/Eastern Strait of Juan de Fuca summer chum, Coastal-Puget Sound bull trout. <b>Non-listed:</b> coho, pinks, fall chum, cutthroat.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          Puget Sound Recovery Plan, pages 324, 325: "Restoration of Lower River floodplain and delta to River Mile 2.6, Protection of existing functional habitat through land purchase (RM 2.6 - 11.3), Protection of existing functional habitat within the watershed." WRIA 18 LFA: Channel structure and complexity, floodplain connectivity &amp; function, riparian areas &amp; LWD recruitment, water quality.</p> <p><b><u>Restores Formerly Productive Habitat:</u></b>          Often, land purchases are the initial actions leading to major restoration accomplishments, For example, at Rivers End 15 properties, which boarder about 2,000' of river channel and includes about 55 acres of delta flood plain, have been purchased. Livestock have been permanently removed from 50 acres of former flood plain pasture. Numerous cabins and other structures have been removed and extensive reforestation has occurred. Flood plain processes are beginning to occur, the river channel is becoming increasingly sinuous, and levels of large wood are increasing. Similar land purchase, building removal, and reforestation activity is occurring adjacent to the Corps Dike in anticipation of dike setback and flood plain restoration. In many cases the land purchases are a crucial element of large restoration actions.</p> <p><b><u>Protects High Quality Fish Habitat:</u></b>          The project targets the highest-quality remaining habitat and will provide protection far exceeding the requirements of current land use regulations.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b>          Ecosystem functions are protected by 1) permanently protecting mature conifer/hardwood riverine forests for the benefit of fish, mammals, birds, amphibians, and reptiles and/or 2) enabling the restoration of flood plains along 4 miles of river.</p> <p><b><u>Scale of influence:</u></b>  <b>Spatial-</b> The project will protect about 4 miles of mainstem river and side channels. <b>Temporal</b></p>	
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	<p>- Protection will be permanent.</p> <p><b><u>Certainty of Project Success:</u></b>          Numerous properties have already been purchased, including the Woods property which was funded in the 2010 SRFB round. Target properties routinely appear on the market, so certainty of success is very high.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>          Several properties must be acquired in the near-term to enable relocation of the Corps Dike on the lower river, an extremely high priority restoration action. Because the lower river is developing rapidly, the project should be initiated immediately before habitat protection and restoration opportunities are lost.</p> <p><b><u>Cost Range and Appropriateness:</u></b>          Sales price are based on fair market value as determined by an appraisal. Land prices are currently favorable.</p> <p><b><u>Other Key Information, especially any relationship to previous or current projects:</u></b>          This is a highly successful, ongoing project with numerous purchases to date.</p>	
09031.1	<p><b>Dungeness River Riparian Restoration</b></p> <p><b><u>Watershed Priority:</u></b> 4.76</p> <p><b><u>Project Description:</u></b>          In the lower Dungeness River corridor (from the mouth to RM 11), approximately 20% of riverbank riparian vegetation has been removed or significantly denuded. Problem areas are the Mouth to Hurd Creek, RR Bridge reach, and Hwy 101 to May Rd. In addition the entire lower river corridor is infested with Buddleia. This is a long-term investment in the river. Riparian restoration involves three interrelated actions: to eliminate or control noxious weeds, plant unproductive or non-forested sites with appropriate shrubs and trees, and maintain the site until the desired forest community is established (5 years or more).</p> <p><b><u>Why the Project is Needed (limiting factors addressed):</u></b>          The 1914 tax assessor’s map described properties along the river corridor as “logged and burned”, “brush”, and “cleared,” with the stumps per acre noted. The riparian forest has been logged twice throughout much of the river corridor. Loss of native riparian cover allows colonization of invasive species, reduced filtering of sediments and pollutants (fine sediment and water quality), and depleted reserves for woody debris recruitment into the river (channel condition). Some of the riparian corridor is in fair shape, other portions are young and shrub/alder dominated. Buddleia is a present and prolific (noxious-weed) shrub along the entire river corridor. Buddleia displaces native trees and shrubs by forming dense thickets.</p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b> A functional, cottonwood and conifer-dominated forest is a key element to salmon habitat recovery. Large trees are needed as key pieces that anchor log jams and create deep pools for salmon. Large trees also slow down floods and force the river through stable-forested side channels instead of unstable gravel bars. Stable logjams are also a feedback loop to protect the growth and development of riparian forests downstream of the logjams.</p> <p><b><u>Specific Salmon and Char Stocks that will Benefit.</u></b>  <b>ESA-listed:</b> Puget Sound Chinook, Puget Sound steelhead, Hood Canal/Eastern Strait of Juan de Fuca summer chum, Coastal-Puget Sound bull trout. <b>Non-listed:</b> coho, pinks, fall chum, cutthroat.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b></p>	JSKT

	<p>The NOPLE 2011 Draft Strategy Table C: Recommended actions for Dungeness River, Dungeness WRIA 18 LFA (pg 105), and Chapter 5-Dungeness, Puget Sound Recovery Plan, page 325, all have very similar recommendations. “restore functional riparian and riverine habitat..to moderate temperatures, recruit LWD long-term, provide cover, and food production.”</p> <p><b>Restores Formerly Productive Habitat:</b> The Dungeness River has a historical productivity rating of 5 (of a possible 5). Current productivity rating is 2, which is directly related to poor habitat caused by diking, riparian forest harvest, and large wood removal. A riparian forest of functional size and species composition is an essential element to salmonid recovery.</p> <p><b>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</b> Our strategy to recovery ecosystem function is three-fold. Recover floodplain to the greatest extent possible, improve salmon habitat in the near term with large wood recovery, and restore the riparian forest to a species composition and function that benefit salmonids. The riparian species composition would include black cottonwood since that species will grow to 3-4 ft diameter in less than 50 years, and conifers such as western red cedar and Douglas-fir. A restored riparian forest will shade the river and especially side channels, provide cover for fish and wildlife, and serve as a permanent source of wood for habitat.</p> <p><b>Scale of influence:</b>  <b>Spatial</b> - The project will cover approximately 11 miles of the lower river (we are controlling knotweed upriver of the hatchery). We have been engaged in noxious weed control for about four years (see map); while knotweed is under control, a concerted effort and more years is needed to control Buddleia. <b>Temporal</b> – while there are places currently with good riparian habitat, it will take time to re-grow a functional riparian forests in other parts of the river corridor; in the short-term we plan large wood projects to provide for improved salmon habitat now.</p> <p><b>Certainty of Project Success:</b>          We have multiple ongoing riparian restoration projects, some in partnership with Clallam County and WDFW. We have planted and are planting roughly 40 acres of riparian forest at Rivers End as the last step to floodplain recovery. Behind the Corps dike we have planted 46 acres (which we are maintaining) and have 15 acres remaining to plant. We are controlling Buddleia and replanting with western red cedar in about ¼ of the river corridor and need to expand that to the entire river corridor. We will build upon these projects and expand this effort to the lower 11 miles.</p> <p><b>Timing Needs &amp; Sequencing Requirements (project readiness):</b>          Because of its large size and the numerous landowners involved, this is a multi-year effort with several funding sources. What is limiting our effort at this time is limited funding.</p> <p><b>Cost Range and Appropriateness:</b>          The entire project to control invasive species, replant and maintain will cost \$350-500k over a period of 7 years.</p> <p><b>Other Key Information especially any relationship to previous or current projects:</b>          The project integrates with previous and future work building logjams on the river, and setting back dikes or pulling out rock banks in favor of logjams. We view habitat recovery in the Dungeness as a three-legged stool: floodplain restoration to provide flood storage, new side-channels, and space to reduce channel grade, large-wood placement to provide habitat in the short-term, and riparian forest recovery for the longer term.</p>	
09032.1	<p><b>Dungeness Drift Cell Conservation</b></p> <p><b>Watershed Priority:</b> 4.27</p> <p><b>Project Description:</b>          Dungeness Bay provides approximately 5,200 acres of critical spit and estuary habitat for a</p>	JSKT

	<p>large variety of waterfowl, shorebirds, wading birds, marine and freshwater mammals, crustaceans, shellfish, forage fish, salmon and char. Dungeness Bay is wholly created by the fragile 5-mile long Dungeness Spit. The spit itself is entirely the product of enormous sediment recruitment, originating primarily from the 8.8-mile drift cell to the west. Any decrease in sediment supply resulting from the construction of shoreline armoring, jetties, groins, or other shoreline structures could cause Dungeness Spit, Dungeness Bay, and their associated nearshore habitats to quickly erode away. This project will provide long-term protection for Dungeness Spit and Dungeness Bay through the purchase of conservation easements and properties, and the relocation or decommission of structures and infrastructure along the entire Dungeness drift cell. The project will occur in the following phases: 1) measure bluff erosion rates, 2) develop a conservation plan, including public outreach 3) design conservation measures, 4) relocate infrastructure and buildings, and 5) purchase conservation easements and property.</p> <p><b><u>Why the Project is needed (limiting factors addressed):</u></b>          Although upland areas are being developed adjacent to the Dungeness drift cell (DDC), no shoreline armoring has occurred to date. Spectacular erosion of the similar Ediz Hood in Port Angeles demonstrates the vulnerability of Strait of Juan de Fuca spits to the loss of recruited sediment. Any significant shorelines armoring within the DDC will seriously imperil the existence of Dungeness Spit and Dungeness Bay. Existing regulations do not provide protection from this potential devastating impact. In numerous locations structures and infrastructure are located near the bluff edge, requiring that either a) shoreline armoring must occur or b) improvements be relocated or decommissioned. LFA elements include: 1) ecosystem links between upland and nearshore habitats, 2) reduced sediment input from feeder bluffs to nearshore area causes degradation of the beach, resulting in loss of the shallow, nearshore migration corridors and eventual loss of the spits themselves, 3) loss of riparian vegetation that provides shade to the upper beach.</p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b>          The project will permanently protect an enormous amount (approximately 5,200 acres) of 1) forage fish spawning habitat and 2) prime nearshore salmon and char rearing and migration habitat, especially for Coastal-Puget Sound bull trout, Puget Sound Chinook, pink, coho, and fall chum salmon, and summer chum originating in the Dungeness River, Jimmycomelately Creek and Discovery Bay.</p> <p><b><u>Specific Salmon and Char Stocks that will benefit.</u></b>  <b>ESA-listed:</b> Puget Sound Chinook, Puget Sound steelhead, Hood Canal/Eastern Strait of Juan de Fuca summer chum, Coastal-Puget Sound bull trout. <b>Non-listed:</b> coho, pinks, fall chum, cutthroat.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          Puget Sound Salmon Recovery Plan (PSSRP), habitats and processes critical to support salmon recovery, "drift cell processes (including sediment supply, transport and deposition) that create and maintain nearshore habitat features such as spits, lagoons, bays and beaches" (page 368), PSSRP Dungeness Section, Key strategies and actions supporting the overall approach to recovery, "Nearshore habitat protection" (page 324). "Estuarine and marine nearshore areas of Discovery Bay, Sequim Bay and the Eastern Strait of Juan de Fuca provide valuable juvenile rearing and migration habitats as well as production of food resources for juveniles and adults." Summer Chum Salmon Recovery Plan – May 2007, pg 84. The project protects the above-reference habitat type. NOPL 2011 Draft Strategy Table A: Goals and Objectives, "Restore and maintain ecosystem function and nearshore processes - focus on protection and restoration of habitat-forming, watershed, and nearshore processes." The project's specific objectives, which will be accomplished as described above, are to protect habitat-forming and nearshore processes.</p> <p><b><u>Protects High Quality Fish Habitat:</u></b>          Dungeness Bay is by far the largest estuary on the Washington side of the Strait of Juan de</p>	
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	<p>Fuca (2nd - Pysht estuary, approx. 275 acres, 3rd - WA Harbor, 118 acres). The Bay is replete with superb, productive eelgrass beds (363 acres) and tidal marshes (161 acres).</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b> The natural recruitment and transport of marine sediment is an elemental and crucial ecosystem function that creates and maintains complex shorelines features and associated habitat, in this case Dungeness Spit and Dungeness Bay. These are habitats of regional significance. The project is designed specifically to protect this ecosystem function, which in turn supports the entire Dungeness Bay ecosystem.</p> <p><b><u>Scale of influence:</u></b> <b>Spatial</b> - the project seeks to conserve drift cell processes along 8.8 miles of marine feeder bluffs, leading to the protection of 5,200 acres of aquatic habitat at Dungeness Spit and Dungeness Bay. <b>Temporal</b> - Conservation measures will be designed to preserve drift cell processes for a period of 200 to 500 years.</p> <p><b><u>Certainty of Project Success:</u></b> Landowner willingness is the crucial factor in project success. The number of landowners will increase as larger parcels are subdivided. Drift cell protection will be more difficult and expensive as homes are built near the edge of the bluff. Certainty of success is at its high point now and will diminish over time.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b> Phase 1 (Measurement of bluff erosion rates) is underway and will be completed in early 2011. The remaining phases will then be ready to be undertaken in the order identified above, except that parts of Phases 4 and 5 might occur concurrently or in reverse order.</p> <p><b><u>Cost Range and Appropriateness:</u></b> Cost range for Phase 2 is \$ 75,000 to \$150,000. Cost estimates for the remaining phases cannot be made until Phase 2 is complete, although a placeholder of \$7 million is being used. Easements and land purchases will be based on fair-market value appraisals.</p>	
<p>09091 (Comb- ination of Projects 33, 34,38, 42, 43)</p>	<p><b>Dungeness River Instream Flow Restoration – Irrigation Efficiencies</b></p> <p><b><u>Watershed Priority:</u></b> Dungeness – 4.76</p> <p><b><u>Project Description:</u></b> This suite of projects includes multiple interrelated strategies that restore stream flows in the Dungeness River. One strategy is irrigation water conservation – primarily, irrigation ditch piping. The specific projects proposed include the following:</p> <ul style="list-style-type: none"> <li>• Agnew Irrigation District – piping about 2 miles of ditch saving an estimated 1.0 cfs of water.</li> <li>• Dungeness Irrigation District – piping about 4.6 miles of ditch, preventing 1-1.5 cfs of conveyance losses and tailwater losses that exceed 1.0 cfs. This will complete the piping of the entire distribution system, eliminating all conveyance and tailwater losses.</li> <li>• Dungeness Irrigation Group – piping about 4 miles of ditch, preventing an estimated 1 cfs of conveyance losses and as much as 0.6 cfs of tailwater losses. These projects will complete the piping of the entire Dungeness Group distribution system, eliminating all system losses.</li> <li>• Highland Irrigation District – piping one to two miles of ditch (H10 Lateral), installing a well, or switching to City of Sequim re-use water resulting in in-river water savings of 1.1 cfs and eliminating tailwater discharges to Bell Creek.</li> <li>• Sequim Prairie-Tri Irrigation Association – piping approximately 1.5 miles of ditch (SP-5 &amp; EM-1) to conserve 1-1.5 cfs.</li> </ul>	<p>CCD, WUA</p>

	<p><b><u>Why the Project is Needed (limiting factors addressed):</u></b>                  Low stream flow in the Dungeness River, particularly in late summer and early fall when flows may dip below 80 cubic feet per second (cfs), is a major habitat limiting factor (WRIA 18 LFA, Comprehensive Water Conservation Plan and EIS, Dungeness CIDMP). According to the USGS (CIDMP 2006), only five of 16 fish life history stages are supported in Dungeness River side channels when flows fall below 80 cfs. A minimum of 128 cfs is necessary to support 12 of the 16 life history stages. The US Fish &amp; Wildlife Service recommended minimum flows of 180 cfs during the latter third of the irrigation season (USF&amp;W 1993), although such flows are not achieved in most years. The NOAA Fisheries established a minimum flow target of 105 cfs through the Comprehensive Irrigation District Management Plan (CIDMP) process.</p> <p>The Dungeness River Agricultural Water Users Association (WUA), comprised of four irrigation districts and three irrigation companies have rights to withdraw water from the Dungeness River to supply irrigation water to approximately 7,000 acres of land in the Dungeness Valley. They maintain five diversion points on the Dungeness River and average approximately 50 cfs in withdrawals for the irrigation season running from April 15 to September 15. Water rights and certificates for the Dungeness River held by the WUA total 518.16 cfs. The WUA has agreed to limit water withdrawals to 156 cfs, and at no time take over 50 percent of the river’s flow, thus alleviating catastrophic late season habitat conditions. However, irrigators frequently must sacrifice production to meet the 50 percent requirement and would have to make significant sacrifices to comply with the NOAA Fisheries recommendations.</p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b>                  Research indicates that when flows are below 100 cfs, each additional cfs of flow may result in a one percent increase in Chinook spawning habitat. A <i>Comprehensive Water Conservation Plan</i> was prepared for the Washington Department of Ecology in 1999 to identify and recommend irrigation water conservation projects that the WUA members could implement to reduce withdrawals “...from the Dungeness River to the minimum practicable, thus increasing streamflow in the Dungeness River itself and increasing the chances of survival of federally listed species of salmonids and other stocks of concern, such as pink salmon.” A total of 113 ditch-piping projects are recommended in the plan for a total estimated water savings of over 38 cfs.</p> <p><b><u>Specific Salmon and Char Stocks that will:</u></b>                  Increasing flows in the Dungeness River benefits all salmonids and all life stages, particularly Chinook and pink salmon.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project meet and how?</u></b>                  Restoration of Dungeness River stream flows is identified in the following plans:</p> <ul style="list-style-type: none"> <li>○ Dungeness chapter of the Puget Sound Chinook Recovery Plan</li> <li>○ WRIA 18 Salmon &amp; Steelhead Habitat Limiting Factors Analysis</li> <li>○ WRIA 18 Watershed Plan</li> <li>○ Comprehensive Water Conservation Plan</li> <li>○ Comprehensive Irrigation District Management Plan</li> </ul> <p><b><u>Restores Formerly Productive Habitat:</u></b>                  Reducing water withdrawals from the Dungeness River will restore instream flows. Restoration of instream flows will result in increased habitat in the Dungeness River from the most upstream irrigation water diversion point at river mile 11.1 downstream to the mouth.</p> <p><b><u>Illustrate how Project Supports Restoration or Protection of Ecosystem Functions:</u></b>                  Restoring instream flows is basic to restoration of aquatic ecosystem functions. Without adequate flow in the Dungeness River, the value of other habitat restoration efforts is severely compromised.</p> <p><b><u>Certainty of Success:</u></b></p>	
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	<p>Since the <i>Conservation Plan</i> was prepared in 1998, nearly 30 irrigation efficiencies projects have been implemented. Approximately 40 miles of irrigation ditches have been replaced with pipelines and nearly half of the water savings proposed in the <i>Conservation Plan</i> have been realized.</p> <p><b><u>Cost Range and Appropriateness:</u></b> Irrigation ditch piping costs are estimated to be \$3-4 million.</p>	
12098	<p><b>Dungeness River Instream Flow Restoration - Storage</b></p> <p><b><u>Watershed Priority:</u></b> Dungeness – 4.76</p> <p><b><u>Project Description:</u></b> This suite of projects includes interrelated water storage strategies that contribute to Dungeness River late season stream flow restoration. These strategies include water storage in small off-channel reservoirs and shallow aquifer recharge (SAR). The irrigation water conveyance infrastructure will be utilized to capture and convey Dungeness River flows during periods of high runoff. Capture and storage of runoff will decrease late season withdrawals from the Dungeness River when flows are critically low. In the case of reservoir storage, early season snowmelt will be stored for use later in the irrigation season when stream flows are critically low. In the case of SAR, water will be infiltrated into the ground during periods of high stream flows. Recharging the shallow aquifer early in the summer will ameliorate low late season stream flows in the main stem and tributaries. Treated and reclaimed sewer water will also be infiltrated. The irrigation infrastructure, which includes five diversion points on the Dungeness River and approximately 170 miles of canals, laterals and pipelines, is ideally suited for diverting water and conveying it to areas suitable for SAR. And, there are many existing small reservoirs that could be improved and areas located along irrigation ditches that are suitable for construction of new reservoirs. Both SAR and reservoirs are integral components of comprehensive irrigation improvement projects.</p> <p><b><u>Why the Project is Needed (limiting factors addressed):</u></b> Low stream flow in the Dungeness River, particularly in late summer and early fall when flows may dip below 80 cubic feet per second (cfs), is a major habitat limiting factor (WRIA 18 LFA, Comprehensive Water Conservation Plan and EIS, Dungeness CIDMP). According to the USGS (CIDMP 2006), only five of 16 fish life history stages are supported in Dungeness River side channels when flows fall below 80 cfs. A minimum of 128 cfs is necessary to support 12 of the 16 life history stages. The US Fish &amp; Wildlife Service recommended minimum flows of 180 cfs during the latter third of the irrigation season (USF&amp;W 1993), although such flows are not achieved in most years. The NOAA Fisheries established a minimum flow target of 105 cfs through the Comprehensive Irrigation District Management Plan (CIDMP) process.</p> <p>Modeling suggest that less leaking from open irrigation ditches lowers the water table, thereby resulting in less stream recharge later in the season. Irrigation water withdrawals account for as much as 80 percent of stream flow losses, while natural losses to the aquifer can be as high as 20 percent (Bureau of Reclamation 2003). Achieving these targeted flows may in some years only be possible through a combination of reduced late season withdrawals from the Dungeness River and shallow aquifer recharge earlier in the summer.</p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b> Research indicates that when flows are below 100 cfs, each additional cfs of flow may result in a one percent increase in Chinook spawning habitat. A Dungeness groundwater model was developed to quantify stream flow benefits from SAR (PGG 2009); however, the benefits of small reservoir storage have not been quantified. There are limited opportunities to restore stream flows and keep agriculture in production in the Dungeness Valley. SAR and small storage represent solutions that to meet the water needs of fish and farms.</p> <p><b><u>Specific Salmon and Char Stocks that will:</u></b></p>	<p>CCD, WUA, CC, WWT</p>

	<p>Increasing flows in the Dungeness River benefits all salmonids and all life stages. Chinook and pink salmon particularly benefit from increased flows in the summer.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project meet and how?</u></b>                  Restoration of Dungeness River stream flows is identified in the following plans:</p> <ul style="list-style-type: none"> <li>○ Dungeness chapter of the Puget Sound Chinook Recovery Plan</li> <li>○ WRIA 18 Salmon &amp; Steelhead Habitat Limiting Factors Analysis</li> <li>○ WRIA 18 Watershed Plan</li> <li>○ Comprehensive Water Conservation Plan</li> <li>○ Comprehensive Irrigation District Management Plan</li> <li>○ Aquifer Recharge Feasibility Study for the Dungeness Peninsula</li> </ul> <p><b><u>Restores Formerly Productive Habitat:</u></b>                  Reducing water withdrawals from the Dungeness River and mitigating the impacts of groundwater withdrawals will restore instream flows. Restoration of instream flows will result in increased habitat throughout the lower Dungeness River, particularly the water losing reaches.</p> <p><b><u>Illustrate how Project Supports Restoration or Protection of Ecosystem Functions:</u></b>                  Restoring instream flows is basic to restoration of aquatic ecosystem functions. Without adequate flow in the Dungeness River, the value of other habitat restoration efforts is severely compromised.</p> <p><b><u>Certainty of Success:</u></b>                  Over the past century, small reservoirs have been constructed by individual landowners throughout the Dungeness Valley to ensure adequate supplies of irrigation water. Many of these reservoirs would greatly benefit from enlargement and enhancement. The largest reservoir in the valley was constructed in 2005-06 by the Sequim Prairie-Tri Irrigation Association as part of a highly successful comprehensive irrigation efficiencies project that also included piping over 3.5 miles of open ditches. A shallow aquifer recharge feasibility study completed in 2009 determined that SAR holds considerable promise for increasing late season stream flows.</p> <p><b><u>Cost Range and Appropriateness:</u></b>                  Anticipated costs for implementation of all the strategies identified here have not been determined.</p>	
<p>09092                  (Comb-                  ination of                  Projects 35                  &amp; 36)</p>	<p><b>Dungeness River Floodplain Restoration</b></p> <p><b><u>Watershed Priority:</u></b> 4.76</p> <p><b><u>Project Description:</u></b>                  This project is floodplain restoration through the setback or reconfiguration of dikes or armored banks, from the mouth to Canyon Creek (RM 0 to 10.7). The productivity of salmon in this steep watershed is dependent on a functional floodplain and the river free to move. Where possible, floodplain restoration projects will be linked to riparian reforestation and placement of engineered logjam projects. Riparian reforestation and large wood restoration are covered under separate projects. Project phases for floodplain recovery include: Rivers End acquisition (RM 0.3-0.8, completed), Army Corps dike setback and channel reconstruction (RM 0.8-1.7), Ward Road reconfiguration (RM 3-3.3), RR Bridge trestle replacement (RM 5.7), Dungeness Meadows dike reconfiguration (RM 7.5), Robinson side channel restoration (RM 8.9-9.2), and upper Haller dike setback (RM 9.4-9.6).</p> <p>Army Corps dike setback is in planning and design. The Ward Rd reconfiguration would pull the road back from the river edge and setback the bank armoring that confines the river. The RR Bridge trestle replacement would open the floodplain to the west of the bridge to side</p>	<p>JSKT/CC/Army                  Corps</p>

	<p>channel development and flooding. Currently the trestle functions as a sieve and significantly restricts flood flows. The Dungeness Meadows dike reconfiguration would return some amount of river flows to Spring Creek. Spring Creek at one time was a productive spawning and rearing side channel. Robinson side channel restoration would setback an armored pinch point on the river to expand spawning and rearing area, and upper Haller dike setback would recover floodplain lost in the last several decades.</p> <p><b><u>Why the Project is Needed (limiting factors addressed):</u></b>          The Dungeness watershed is very steep, likely the steepest fall per mile for a river of its size on the Peninsula. The river pattern is anastomosing, with channel avulsion creating multiple main channels or side channels. The river system is sensitive to the loss or confinement of floodplain through diking and bank armoring. Historically (1914 through 1960's, the start of diking in the river), the lower river accessed channels across a much wider floodplain area than present. It is likely the river bed has in places degraded (downcut) one to several feet from Old Olympic Hwy to Kinkade Island (RM 4-10). Further bed degradation was observed following diking and channel manipulation at the Dungeness Meadows dike reach (1980's). Salmon habitat recovery is tied to floodplain recovery in the Dungeness watershed.</p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b>          In the 1950's and 1960's, the river meandered across a wider floodplain area. The overall channel grade was less than present. The force of floodwater is driven by channel slope. Restoring floodplain, along with in-river wood placement and riparian forest recovery, will return stable, complex salmonid spawning and rearing habitat to the mainstem Dungeness. Above Old Olympic Hwy, median diameter of the bed is cobble sized at 100-170 mm (BOR 2002), much larger than preferred chinook spawning gravel size of 80 mm.</p> <p><b><u>Specific Salmon and Char Stocks that will Benefit.</u></b>  <b>ESA-listed:</b> Puget Sound Chinook, Puget Sound steelhead, Hood Canal/Eastern Strait of Juan de Fuca summer chum, Coastal-Puget Sound bull trout. <b>Non-listed:</b> coho, pinks, fall chum, cutthroat.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          The NOPLE 2011 Draft Strategy Table C: Recommended actions for Dungeness River, Dungeness WRIA 18 LFA (pg 105), and Chapter 5-Dungeness, Puget Sound Recovery Plan, page 325, all have very similar recommendations. "Floodplain Restoration/Constriction Abatement (RM 2.6 - 11.3) to alleviate channel constrictions thereby increasing corresponding channel meanders, and reduce gradient, velocity, scour, and bank erosion."</p> <p><b><u>Restores Formerly Productive Habitat:</u></b>          The Dungeness River has a historical productivity rating of 5 (of a possible 5). Current productivity rating is 2, which is directly related to poor habitat caused by diking, riparian forest harvest, and large wood removal. Floodplain recovery is an essential element to salmonid recovery.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b>  <b>Scale of influence: Spatial</b> - The project will cover approximately 10 miles of mainstem river, this is virtually all of river corridor with a large and wide floodplain. <b>Temporal</b> – Restored floodplain will benefit salmon in perpetuity. This project will be combined with Large wood restoration and riparian reforestation where appropriate and allowed.</p> <p><b><u>Certainty of Project Success:</u></b>          Each project element has its own challenges to complete. Dungeness Corps dike setback is underway. Ward Rd reconfiguration will require some property acquisition and an agreement with Clallam County. Replacing the RR Bridge trestle with a floodplain-friendly structure requires funding. The remaining projects upriver of Hwy 101 will continue to evolve following community meetings with landowners. Jamestown S'Klallam Tribe, Clallam County, Washington Department of Fish and Wildlife have a strong partnership in moving towards</p>	
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	<p>floodplain recovery in the Dungeness watershed.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>          Because of its large size and the numerous landowners involved, the project must be undertaken as a series of design and construction phases. One project is completed (Rivers End), another is in design (Corps dike setback), in the third we are looking for funding (RR Bridge trestle), and the others require more communication with partners and the community.</p> <p><b><u>Cost Range and Appropriateness:</u></b>          The entire project will cost between \$10 and \$15 million.</p> <p><b><u>Other Key Information especially any relationship to previous or current projects:</u></b>          The project integrates with previous and future work building logjams on the river, invasive weed control, and riparian reforestation. We view habitat recovery in the Dungeness as a three-legged stool: floodplain restoration to provide flood storage, new side-channels, and space to reduce channel grade, large-wood placement to provide habitat in the short-term, and riparian forest recovery for the longer term.</p>	
09041.1	<p><b>Dungeness River – Meadowbrook Creek Restoration</b></p> <p><b><u>Watershed Priority:</u></b> 4.76</p> <p><b><u>Project Description:</u></b>          We will reconnect Meadowbrook Creek to the Dungeness River. East of Sequim-Dungeness Way, Meadowbrook Creek will be returned to its original, more sinuous channel, fill will be removed that supports reed canary grass, and we will plant with native wetland species. The existing ditched channel will remain as off-channel habitat. Culverts that used to constrain Meadowbrook Creek were removed in 2009.</p> <p><b><u>Why the Project is Needed (limiting factors addressed):</u></b>          The Dungeness River has limited tributary rearing. Prior to 1999, Meadowbrook Creek was the last tributary of the Dungeness River before saltwater. Beach erosion redirected the Creek directly to saltwater. Meadowbrook creek used to support spawning and rearing coho and spawning fall chum, which ended around 2000. The former mouth of Meadowbrook Creek at Dungeness River is documented rearing habitat for all Dungeness salmon including chinook. The goal is to extend and open significant new rearing habitat to salmon.</p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b>          Meadowbrook Creek is a spring-fed tributary that is also fed via groundwater from a water-losing reach of the Dungeness River. It is expected the River will continue to lose water in this reach for some years to come, even following dike setback. The flow in Meadowbrook Creek is fairly constant year-around. We expect salmon to utilize this rearing and spawning habitat. Chinook is dependent on hatchery support because the in-river habitat is steep, in poor condition, and with limited spawning grounds and potential rearing habitat. This project should provide additional rearing space to chinook, summer chum, and steelhead.</p> <p><b><u>Specific Salmon and Char Stocks that will Benefit.</u></b>  <b>ESA-listed:</b> Puget Sound Chinook, Puget Sound steelhead, Hood Canal/Eastern Strait of Juan de Fuca summer chum, Coastal-Puget Sound bull trout. <b>Non-listed:</b> coho, fall chum, cutthroat.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          The NOPL 2011 Draft Strategy Table C: Recommended actions for Dungeness River, and Chapter 5-Dungeness, Puget Sound Recovery Plan, page 325, recommend: “restoration of the</p>	JSKT/ Dungeness Farms/ CCD/ WDFW

	<p>lower river floodplain and delta to increase the quantity of essential rearing and salt/freshwater transition habitat.” Meadowbrook creek is both a spring-fed (former) tributary and is also tidally influenced. While the entire project area will still be tidally influenced, modeled salinities were very similar to the Dungeness River mouth and approximated freshwater (Meadowbrook Creek Restoration Hydrodynamic Model, Battelle 2010).</p> <p><b><u>Restores Formerly Productive Habitat:</u></b> The Dungeness River has a historical productivity rating of 5 (of a possible 5). Current productivity rating is 2, which is directly related to poor habitat conditions. It will take some time to recover Dungeness in-river habitat, this project will provide access now to high-quality rearing and potentially spawning habitat.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b> <b>Scale of influence: Spatial</b> - The project is approximately 30 acres of mostly saltmarsh \and wetland habitat, and will return 0.9 miles of creek to functional salmon habitat. <b>Temporal</b> – the site vegetation will fully recover and recolonize disturbed soils in three to five years. It is expected that fish will utilize the site almost immediately.</p> <p><b><u>Certainty of Project Success:</u></b> We are certain the site will be used by salmon. The former mouth of Meadowbrook Creek is currently heavily utilized by rearing juvenile salmon, especially around the logjams (Nikki Sather, M.S. Theses 2008). The shoreline adjacent to the mouth of Meadowbrook Creek is again accreting. It is expected the shoreline will accrete bay-ward in the coming years, although it is unknown how that would impact the mouth of Meadowbrook Creek if this project was not constructed. Battelle was contracted to look at three project alternatives for reconnecting the Creek to the River, the one displayed here (map) is cost effective and is further from the bay, thereby ensuring it will function into the future.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b> This project is on one landowner’s property, a duck-hunting club that is active in habitat conservation. The project was initially managed by Ducks Unlimited (DU), they are no longer active on the north Peninsula. Ducks Unlimited contracted to Battelle for their tidal study, DU also created an extensive topographic survey of the site, and developed a conceptual restoration plan. Jamestown S’Klallam Tribe in 2009 implemented the first portion of the project and remove two undersized culvers over Meadowbrook Creek. We are ready for final design and construction.</p> <p><b><u>Cost Range and Appropriateness:</u></b> Expected funding needs are around \$250k.</p> <p><b><u>Other Key Information especially any relationship to previous or current projects:</u></b> Houses on 3 Crabs Rd (adjacent to the project) are subject to flooding during winter high tides. The Clallam Conservation District convened a series of public meetings to discuss flooding and possible remedies (3 Crabs Report, January 2009). Reconnecting Meadowbrook Creek to the Dungeness River was suggested as a way to reduce flooding to landowners, and also reduce flooded septic systems (improve Dungeness Bay water quality).</p>	
09040	<p><b>Cassalery Creek Instream Flow Enhancement Project</b></p> <p><b><u>Project Description:</u></b> This project is located in a critical aquifer recharge area within the Dungeness River Watershed and WRIA 18 East. The project focuses on improving Cassalery Creek salmon habitat through the addition of between 0.1 and 0.2 CFS of Washington State Department of Ecology classified Class “A” reclaimed water to the stream, drinking water quality. This re-use water would be pumped through a buried pipeline from the SunLand Wastewater Treatment Plant to a series of cooling ponds prior to entering Cassalery Creek. This concept of re-use</p>	SWD

	<p>water for stream flow augmentation is not new or dissimilar to the Bell Creek Instream Flow Enhancement Project sponsored by the City of Sequim.</p> <p>The concept for this Salmon Habitat Improvement Project utilizing Beneficial Water Re-use in this location has been under discussion for more than eight years with many stakeholders, including SunLand Water District, Washington State Department of Health, Clallam County, Washington State Department of Fish and Wildlife, Washington State Department of Ecology, and the Jamestown S’Klallam Tribe.</p> <p>During those discussions, it was agreed that the project should reference a guaranteed supplemental instream flow, and due to the plants limited capacity, SunLand Water District can only guarantee 0.1-0.2 cfs of additional instream flow.</p> <p>Stocks benefiting from this project are Fall Chum, Winter Steelhead, Cutthroat, and Coho. Also, according to the WRIA 18 Watershed Plan, Bull Trout may occur in Cassalery Creek because they have been observed in Bell Creek.</p> <p>Clallam County State of the Streams (page 94, Greater Dungeness Watershed Study) refers to Cassalery Creek as a low velocity stream with limited flows, so there is limited ability for the stream to flush out any toxins that enter the stream. The Creek has highly impaired ratings for biological conditions and highly/critically impaired ratings for habitat integrity.</p> <p>Higher instream flows would improve the habitat for salmonid species and improve the overall biological viability of the Creek.</p> <p>In the WRIA 18 Limiting Factors Analysis, it states that “Instream flow recommendations, based on toe width measurements of 5.7 feet made at Woodcock Rd., have been made for Cassalery Creek. Recommended instream flows are 5.0 cfs for the period November-January (coho spawning), 3.0 cfs for February, 12.0 cfs for March-April (steelhead spawning), 8.0 cfs for May-June, and 2.0 cfs for the period July-October (steelhead rearing)(Beecher and Caldwell 1997). Toe-width is primarily influence by bank-full flows in winter months, however it may be additionally influenced in this watershed by irrigation groundwater returns and past land use. The limited flow data that is available for Cassalery Creek was not reviewed to ascertain consistency with recommended instream flows.”</p> <p>In the WRIA 18 Watershed Plan (the Chapter on Water Quantity), Cassalery Creek is listed as one of the few creeks with high instantaneous water rights relative to their flows. There are 9.74 cfs of instantaneous water rights, and the average annual flow is 0.8 cfs.</p> <p>It’s clear that there is a need for instream flow supplementation. With an average flow of 0.8 cfs, it is well below the levels recommended in the Limiting Factor Analysis. The low flow issue is compounded by the high allocation of water rights.</p> <p>The Puget Sound Chinook Recovery Plan (Chapter 6: Regional Salmon Recovery Strategies) references the importance of regulating instream flows, particularly for the Dungeness River Watershed. Additionally, low instream flows are also mentioned as a viability stressor in the Draft WRIA 18 Dungeness/Elwha/Morse Steelhead Limiting Factors.</p>	
10077.1	<p><b>Gray’s Marsh Restoration and Feasibility Design Phase 1</b></p> <p>Project Partners and point of contact: Gray’s Marsh Landowners (Robin Berry), WDFW (Michael Blanton), NOSC (Rebecca Benjamin) and Dungeness Farms (Matt Heinz).</p> <p><b>Background:</b></p> <p>Graysmarsh is an approximately 140-acre freshwater/brackish water marsh located at the mouth of Gierin Creek (WRIA 18.), which enters the Strait of Juan de Fuca immediately east of Dungeness Bay. The stream presently drains through an undersized tide gate that limits the saltwater tidal prism. An approximately 30 acre brackish portion of Grays marsh is all that remains of the Gierin Creek estuary, which was once about 120 acres in size. The remainder</p>	WDFW

	<p>of the marsh is now freshwater. Tide gating of Gierin Creek dates back to approximately 1910. In contemporary times, Graysmarsh has been managed exclusively for wildlife and fish habitat. Livestock are not allowed access to the marsh, nor do any agricultural practices occur within the marsh. The private owners of Graysmarsh diligently strive to maintain good waterfowl habitat through the practices of 1) growing barley specifically for duck forage on adjacent agricultural land, 2) annually mowing expansive areas of cattails and Reed's canary grass and 3) occasionally dredging certain channels within the marsh to maintain depth. Recently the piping of Dungeness Irrigation Canals to eliminate seeping and conserve Dungeness river water has resulted in reduced freshwater flows into Graysmarsh and subsequent loss of spawning habitat in the upper reaches of Gierin Creek. The Landowners are interested in learning what the available restoration alternatives are that would benefit this unique coastal marsh estuary and riverine ecosystem while maintaining the various agricultural and recreational land uses.</p> <p><b><u>Project Scope and Purpose:</u></b>          This project is a restoration feasibility and conceptual design study, similar to the Discovery Bay Rail Road Grade Feasibility study; Washington Harbor feasibility study and Pysht Estuary Restoration feasibility and design study.</p> <p>We are seeking funds to develop a suit of various restoration design concepts and scenarios while working with Graysmarsh landowners to understand their land use desires and objectives. As with any restoration project occurring on private land, the land owners will have the ultimate decision as to what, if any, restoration activity will occur at Gray's Marsh. Likewise, any restoration design concept put forward seeking additional funding for engineering and construction through the Lead Entity and Salmon Recovery process will have to be vetted through that processes and compete with other restoration projects proposed. This estuary area is extremely unique and very limited within the Eastern Straits of Juan de Fuca. There is a range of possible restoration options that can occur at this site that will benefit salmon restoration and that can meet the needs of the land owners. As restoration practitioners know, an important aspect of habitat restoration for salmonids, is returning fish access to their historic fresh and saltwater estuaries. While, full restoration of natural fish access and estuary function to the entire site may need to be limited by the land owners desire to manage the site for other uses. Meaningful restoration is achievable at this site. Other examples of nearshore restoration projects that have or will achieve great benefits to salmon despite the lack of full restoration of the site include Washington Harbor, Physt and Pitship Pocket Estuaries. At Washington Harbor, full removal of road prism was not achievable due to various land owner constraints. Likewise, at the Physt and Pitship pocket estuary, full restoration was not achievable due to land owner constraints. However, both the proposed restoration projects at the Washington Harbor and work done at the Physt and Pitship pocket estuary will have tremendous impact to the recovery of salmon. Likewise, full restoration of Graysmarsh to pre 1800 conditions is not achievable. What can be achieved? The ability to increase access of salt and freshwater marsh to salmonids for rearing and feeding is critical. Let's explore and understand what are the salmonid restoration opportunities that can be achievable at Graymarsh? This is a great opportunity and we look forward to your support for the first phase of this project.</p> <p><b><u>Why the Project is needed (limiting factors addressed):</u></b></p> <ul style="list-style-type: none"> <li>• "There is broad consensus that salmon require estuarine conditions that support production of prey organisms for juvenile outmigrants as well as for juvenile salmonid rearing and for returning adults. Estuaries, which provide critical rearing and transition habitat for salmonids have been physically altered at the mouth of many of the streams in WRIA 18, dramatically affecting the habitat and physical functions characteristic of natural estuaries."</li> <li>• Inter-tidal water exchange is currently significantly restricted by the construction of a tide gate. In addition to impairment of fish passage, the primary effect of the tide gate is that salt water interchange with the historic estuary is severely limited.</li> </ul> <p>WRIA 18 Limiting Factors Analysis Action Recommendations: The following ranked salmonid</p>	
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	<p>habitat restoration actions are recommended for Gierin Creek (taken from WRIA 18 LFA):</p> <ul style="list-style-type: none"> <li>• Pursue removal of the tide gate and restoration of salt marsh habitat in the estuary, including returning Gierin Creek to its former meandering location, which essentially bisected the marsh (this option is not currently favored by the landowners -a more likely scenario may involve development of a pocket estuary, enlarging existing tide gate or relocating tide gate, or multiple tide gates and/or restoration enhancements to Gierin Creek . These types of scenarios and others will be considered)</li> <li>• Develop and implement a short-term LWD strategy to provide LWD presence and habitat diversity until full riparian function is restored</li> <li>• Restore functional riparian zones throughout watershed, particularly upstream of Holland Rd., and identify and correct areas affected by unrestricted animal access</li> </ul> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b> Increase salt and freshwater marsh connectivity. Enhancement of Gierin Creek will benefit all fish species.</p> <p><b><u>Certainty of Project Success:</u></b> This feasibility study will help to determine restoration options and relatively likelihood of success.</p> <p><b><u>Address Timing Needs &amp; Sequencing Requirements:</u></b> This is the first and most logical phase of the project.</p> <p><b><u>Cost Appropriateness:</u></b> \$60 – 100K Full restoration costs will be able to be estimated once a restoration options has been made. This feasibility, restoration and design “report project” is the first step and funding will be in line with the scope of work... number of options consider, hydraulic modeling, and engineering design 30%.</p>	
09046	<p><b>Washington Harbor Habitat Protection Project</b></p> <p><b><u>Project Description:</u></b> Washington Harbor is an approximately 118-acre estuarine system at the mouth of Bell Creek and is also located adjacent to the entrance of Sequim Bay. The estuary lies 5 miles along the marine migration corridor of Puget Sound Steelhead and Hood Canal/Strait of Juan de Fuca summer Chum salmon from Jimmycomelately Creek in Sequim Bay. Washington Harbor is also located just 7.5 miles from the Dungeness River mouth and therefore likely provides habitat for Dungeness Chinook, Bull trout, and summer Chum.</p> <p>The estuary is probably used by many populations of juvenile salmonids originating from Discovery Bay and other systems to the west. This habitat protection project will purchase conservation easements to permanently protect a 150 to 450-foot wide riparian buffer (approximately 75 acres) surrounding Washington Harbor. The bed of Washington Harbor is stateowned.</p> <p><b><u>Limiting Factors Addressed:</u></b></p> <ol style="list-style-type: none"> <li>1. “There is broad consensus that salmon require estuarine conditions that support production of prey organisms for juvenile outmigrants as well as for juvenile salmonid rearing and for returning adults.--- Estuaries, which provide critical rearing and transition habitat for salmonids (as they move as juveniles from fresh to salt water, and as adults from the marine environment back to fresh water), have been physically altered at the mouth of many of the streams in WRIA 18, dramatically affecting the habitat and physical functions characteristic of natural estuaries.” (WRIA 18 LFA)</li> <li>2. “This marine estuary has long been recognized as providing very high quality fish and wildlife habitat. The Interagency Committee for Outdoor Recreation (IAC) has committed \$3.2</li> </ol>	NOLT/ JSKT

	<p>million towards acquisition of property in and immediately adjacent to Washington Harbor. Unfortunately, there has been a lack of willing sellers. Funds should be retained to utilize for any acquisition or conservation easement opportunities that may arise.” (WRIA 18 LFA)</p> <p><b><u>Stock Status and Trends:</u></b> The project addresses stock status and trends by maintaining expansive, important nearshore habitat for numerous salmonid populations and forage fish.</p> <p><b><u>Listed Stocks:</u></b> Hood Canal/Strait of Juan de Fuca summer chum and Puget Sound steelhead: Jimmycomelately Creek (5 miles directly along the migration corridor), Salmon Creek and Snow Creek (16 miles east along the likely migration corridor), Dungeness River (7 miles west), Chimacum Creek (20 miles east). Puget Sound Chinook and Bull trout: Dungeness River (7 miles west). Dungeness Chinook marine distribution data suggest that this population most likely utilizes Travis Spit nearshore habitat.</p>	
09047.1	<p><b>Washington Harbor Restoration Project</b></p> <p><b><u>Watershed Priority:</u></b> 4.27</p> <p><b><u>Project Description:</u></b> WA Harbor is crossed by a 1,300-foot long road, equipped with just two 6-foot culverts, which disrupts habitat connectivity, tidal hydrology and habitat forming processes in the estuary's northern 37 acres. This area historically provided the finest tidal marsh and eelgrass habitat in the estuary. The road's impacts appear to have destroyed the eelgrass beds and evidence indicates that the estuarine marsh has been deprived of sediment and is eroding. Superb habitat still exists within the marsh, but fish access into this area is hindered by the culverts which are perched and discharge flood and ebb tides with extremely high velocities. At no time in the tidal cycle can chum fry migrate into the northern 37 acres while remaining in their preferred shallow water habitat. During much of the tidal cycle velocities in the culverts are too high to allow fish passage. The movements of sediment and wood are blocked by the road. The culverts cause a 2-hour lag in tidal processes in the northern 37 acres, which has caused WA Harbor's main inlet to narrow by 28% since the road was constructed in the mid 1960's. The project will provide unrestricted fish access and restore tidal hydrology and habitat forming processes in WA Harbor's northern 37 acres by removing the 6-foot culverts and 600 feet of road and replacing them with a 600-foot bridge.</p> <p><b><u>Why the Project is needed (limiting factors addressed):</u></b> From the WRIA 18 LFA: 1) <i>“Estuaries, which provide critical rearing and transition habitat for salmonids--- have been physically altered at the mouth of many of the streams in WRIA 18, dramatically affecting the habitat and physical functions characteristic of natural estuaries.”</i> 2) <i>“Intertidal water exchange to the north end of the (WA) harbor was significantly restricted by the construction of a 650-foot long fill causeway across the tidelands to support the Sequim Wastewater Treatment Plant outfall. This fill resulted in the direct loss of approximately 13,000 ft.2 of intertidal area under the road fill, assuming an average fill base width of 20 ft.”</i> 3) <i>“In addition, approximately 10-12 acres of intertidal estuary in the north end of the bay was adversely affected by reduction of tidal flux and hypersalinity, which has also developed as a result of reduced tidal interchange.”</i> 4) LFA recommendation: <i>“Restore unrestricted tidal flow and flushing to the north end of Washington Harbor.”</i></p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b> Pocket estuaries, such as WA Harbor, provide supremely valuable, productive nearshore habitat for juvenile salmon, especially chum and Chinook. WA Harbor lies 5 miles along the marine migration corridor of ESA-listed Hood Canal/Eastern Strait of Juan de Fuca summer chum salmon from Jimmycomelately Creek, the site of a completed, highly successful \$7.5 million portfolio ecosystem restoration project. This stock has increased from a return of 7 spawners in 1999 to 4,027 spawners in 2010. The project will provide a significant increase</p>	JSKT

	<p>(37 acres) in pocket estuary habitat to support this spectacularly rebounding salmon stock. WA Harbor is also located just 7.5 miles from the Dungeness River mouth and is thought to provide habitat for Dungeness Chinook, summer and fall chum, and bull trout. Many other populations of juvenile salmon, including summer chum from Discovery Bay's Salmon and Snow Creeks (16 miles east) and fish originating from other systems farther east in Hood Canal and Puget Sound most likely use the estuary.</p> <p><b><u>Specific Salmon and Char Stocks that will benefit.</u></b>  <b>ESA-listed:</b> Hood Canal/Strait of Juan de Fuca summer chum, Puget Sound Chinook, Puget Sound steelhead, Coastal/Puget Sound bull trout. <b>Non-listed:</b> coho, pinks, fall chum, cutthroat.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          Puget Sound Salmon Recovery Plan Dungeness Section, Key strategies and actions supporting the overall approach to recovery, "<i>Nearshore habitat protection and restoration to improve the quantity and quality of estuarine and nearshore habitat.</i>" (Page 325).          WRIA 18 LFA, "<i>Restore unrestricted tidal flow and flushing to the north end of Washington Harbor.</i>" NOPL 2011 Draft Strategy Table A: Goals and Objectives, "<i>Restore and maintain ecosystem function and nearshore processes - focus on protection and restoration of habitat-forming, watershed, and nearshore processes.</i>" Tidal hydrology and habitat-forming processes were specifically addressed in the 2010 <b>Washington Harbor Restoration Project Geomorphic Assessment</b>, and the 600-foot bridge will meet these objectives.</p> <p><b><u>Restores Formerly Productive Habitat:</u></b>          WA Harbor is a 118-acre barrier estuary that provides superb, productive estuarine marshes and eelgrass meadows that are excellent marine nearshore habitat for a variety of salmon and char species. Within the northern 37 acres the road and culverts have eliminated the eelgrass beds, degraded the salt marsh, caused concerns for thermal impacts, and impaired fish access. The project will reverse or eliminate these impacts and return this area to its former condition. The Point No Point Treaty Council (PNPTC) Report, "<i>Historical Changes to Estuaries, Spits, and Associated Tidal Wetland Habitats in the Hood Canal and Strait of Juan de Fuca Regions of Washington State</i>" (2006) makes the following observations. "Perhaps the most apparent human alteration to wetland habitat is a 1250 foot-long east-west road that traverses the lagoon and tidal marsh and alters much of the north section of tidal lagoon and marsh habitats (Figure 7). This road has substantially impaired the historical habitat connectivity of the complex." The project will eliminate this connectivity impact.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b>          The project restores ecosystem processes by: 1) Restoring tidal hydrology, which will engender the return of eelgrass beds, eliminate thermal pollution caused by the incomplete draining of the northern 37 acres, increase shorebird foraging habitat, restore the movement of sediment, large wood and nutrients, and improve stability of the main WA Harbor inlet. 2) Restoring habitat connectivity which will allow fish and crustaceans to freely move throughout the entire estuary.</p> <p><b><u>Scale of influence:</u></b>  <b>Spatial-</b> The project has large spatial scale. It profoundly affects 37 acres of estuarine habitat and has secondary benefits for the remainder of the 118-acre estuary. <b>Temporal-</b> Life span of the bridge would likely equal or exceed 70 years. It's unlikely that another structure that obstructs fish migration and the movement of large wood, sediment, and nutrients would ever be permitted in the future. Therefore, the project benefits can reasonably be considered permanent.</p> <p><b><u>Certainty of Project Success:</u></b>          Certainty of success is extremely high. Geomorphic and cultural resource assessments are complete, the bridge is designed to the 80% level, partial construction funds are in hand, permitting is funded, and the project is supported by the landowner, easement holder, and</p>	
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	<p>stakeholders including JST, WDFW, Clallam County, and NOSC.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b> The project is construction ready (see certainty of success).</p> <p><b><u>Cost Range and Appropriateness:</u></b> \$1,745,288 Total project cost = \$47,170/acre. This is extremely cost-appropriate. The average cost for other estuarine marsh restoration projects on the Olympic Peninsula and Hood Canal is \$170,000/acre.</p> <p><b><u>Other Key Information, especially any relationship to previous or current projects:</u></b> This project continues restoration of JCL summer chum pocket estuary habitat that was begun with the 2009 Pitship Pocket Estuary project.</p>	
<p>09093 (Comb- ination of Projects 45 &amp; 37)</p>	<p><b>North Sequim Bay Drift Cell Conservation Project</b></p> <p><b><u>Watershed Priority:</u></b> 4.27</p> <p><b><u>Project Description:</u></b> Permanent protection will be provided for Gibson, South, Travis and Paradise Cove Spits, all clustered near the entrances to WA Harbor and Sequim Bay, along with the 5.2 miles of coastal feeder bluffs that support the spits. Protection will be accomplished using conservation easements, property purchases, and state land management planning. Protected habitat includes 5.2 miles of feeder bluff shoreline, 23,560 feet of spit shoreline, 269 acres of marine shallow water and estuarine habitat, and the productive 10-mile shoreline of the 3,200-acre Sequim Bay. Preserving the health of these spits is essential for the continued existence of WA Harbor, Paradise Cove and the productive geomorphology of Sequim Bay. The project will occur in the following phases: 1) measure bluff erosion rates, 2) develop a conservation plan, including public outreach 3) design conservation measures, 4) relocate infrastructure and buildings, and 5) purchase conservation easements and property.</p> <p><b><u>Why the Project is needed (limiting factors addressed):</u></b> Although upland areas are being developed adjacent to the North Sequim Bay drift cell (NSBDC), little shoreline armoring has occurred to date. Spectacular erosion of the similar Ediz Hood in Port Angeles demonstrates the vulnerability of Strait of Juan de Fuca spits to the loss of recruited sediment. Any significant shorelines armoring within the NSBDC will seriously imperil the existence of these spits, WA Harbor, Paradise Cove and the productive geomorphology of Sequim Bay. Existing regulations do not provide protection from this potential devastating impact. In some locations structures and infrastructure are located near the bluff edge, requiring that either a) shoreline armoring must occur or b) improvements be relocated or decommissioned. LFA elements include: 1) ecosystem links between upland and nearshore habitats, 2) reduced sediment input from feeder bluffs to nearshore area causes degradation of the beach, resulting in loss of the shallow, nearshore migration corridors and eventual loss of the spits themselves, 3) loss of riparian vegetation that provides shade to the upper beach.</p> <p><b><u>Benefit to Salmon (how does it address stock status &amp; trends):</u></b> On the spits themselves, the project will permanently protect an enormous amount (approximately 23,560 feet) of 1) forage fish spawning habitat and 2) prime nearshore salmon and char rearing and migration habitat, especially for Coastal-Puget Sound bull trout, Puget Sound Chinook, pink, coho, and fall chum salmon, and ESA-listed Hood Canal/Eastern Strait of Juan de Fuca summer chum originating in the Dungeness River, Jimmycomelately (JCL) Creek and Discovery Bay. In the embayments, over 11 miles of productive shorelines are protected by the spits. The project addresses stock status and trends by maintaining expansive, important nearshore habitat for numerous salmon, char, and forage fish populations. The project is especially important for summer chum salmon from JCL Creek, the site of a completed, highly successful \$7.5 million portfolio ecosystem restoration project. This stock</p>	<p>JS'KT</p>

	<p>has increased from a return of 7 spawners in 1999 to 4,027 spawners in 2010. The project will maintain much of the nearshore habitat that supports this spectacularly rebounding salmon stock during the early portion of its marine life history.</p> <p><b><u>Specific Salmon and Char Stocks that will benefit.</u></b>  <b>ESA-listed:</b> Puget Sound Chinook, Puget Sound steelhead, Hood Canal/Eastern Strait of Juan de Fuca summer chum, Coastal-Puget Sound bull trout. <b>Non-listed:</b> coho, pinks, fall chum, cutthroat.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b>          Puget Sound Salmon Recovery Plan (PSSRP), habitats and processes critical to support salmon recovery, "drift cell processes (including sediment supply, transport and deposition) that create and maintain nearshore habitat features such as spits, lagoons, bays and beaches" (page 368), PSSRP Dungeness Section, Key strategies and actions supporting the overall approach to recovery, "Nearshore habitat protection" (page 324). "Estuarine and marine nearshore areas of Discovery Bay, Sequim Bay and the Eastern Strait of Juan de Fuca provide valuable juvenile rearing and migration habitats as well as production of food resources for juveniles and adults." Summer Chum Salmon Recovery Plan – May 2007, pg 84. The project protects the above-reference habitat type. NOPL 2011 Draft Strategy Table A: Goals and Objectives, "Restore and maintain ecosystem function and nearshore processes - focus on protection and restoration of habitat-forming, watershed, and nearshore processes." The project's specific objectives, which will be accomplished as described above, are to protect habitat forming and nearshore processes.</p> <p><b><u>Protects High Quality Fish Habitat:</u></b>          Protected habitats include superb, productive eelgrass beds, tidal marshes, pocket estuary habitat, and low-gradient fine-grained beaches.</p> <p><b><u>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</u></b> The natural recruitment and transport of marine sediment is an elemental and crucial ecosystem function that creates and maintains complex shorelines features and associated habitat, in this case Gibson, South, Travis and Paradise Cove Spits and WA Harbor, Paradise Cove, and Sequim Bay. These are habitats of regional significance. The project is designed specifically to protect this ecosystem function, which in turn supports the entire WA Harbor and Sequim Bay ecosystems and their populations of fish, shellfish, mollusks, crustaceans, birds, and mammals.</p> <p><b><u>Scale of influence:</u></b>  <b>Spatial-</b> enormous: 5.2 miles of coastal feeder bluffs, 23,560 of spits, 11+ miles of productive shorelines. <b>Temporal</b> - conservation measures will range from 100 years to permanent.</p> <p><b><u>Certainty of Project Success:</u></b>          Landowner willingness is the crucial factor in project success. The number of landowners will increase as larger parcels are subdivided. Drift cell protection will be more difficult and expensive as homes are built near the edge of the bluff. Certainty of success is at its high point now and will diminish over time.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>          Phase 1 (Measurement of bluff erosion rates) is ready to begin. The remaining phases will then be ready to be undertaken in the order identified above, except that parts of Phases 4 and 5 might occur concurrently or in reverse order.</p> <p><b><u>Cost Range and Appropriateness:</u></b>          Cost range for Phase 1 is \$50,000 to \$70,000; Phase 2 is \$ 75,000 to \$150,000. Cost estimates for the remaining phases cannot be made until Phase 2 is complete, although a placeholder of \$5 million is being used. Easements and land purchases will be based on fair-market value appraisals.</p>	
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12099	<p><b>Johnson Creek Riparian Protection and Restoration</b></p> <p><b><u>Description:</u></b>                  Johnson Creek is east of Sequim, and contains valuable habitat for salmonids and elk. This capital project would acquire land for conservation through easements or fee simple acquisition, and conduct restoration projects on the intact riparian corridor above SR 101 along Johnson Creek. Restoration work could include LWD and management of invasive species.</p> <p><b><u>Why the Project is needed (limiting factors to be addressed):</u></b>                  These limiting factors would be eliminated if lands were permanently protected and restored:</p> <ul style="list-style-type: none"> <li>• Establish riparian corridor protection</li> <li>• Address mass wasting potential</li> <li>• Implement instream fish habitat enhancement project.</li> </ul> <p><b><u>Benefit to Salmon:</u></b>                  Multiple stocks would benefit from protection of the Johnson Creek riparian corridor including ESA winter steelhead, coho, sea-run cutthroat trout, and resident trout</p> <p><b><u>Which Salmon Recovery Plan Objective does this Project Meet and How?</u></b></p> <ul style="list-style-type: none"> <li>• WRIA 17 LFA pg 212-215. Protecting and restoring a riparian buffer.</li> <li>• Puget Sound Recovery Plan – Habitat: Protect Existing Physical Habitat &amp; Habitat Forming Processes</li> <li>• Puget Sound Partnership – Protect Habitat</li> <li>• NOPL Recovery Strategy 2008 – implement salmon recovery plans to protect fish habitat &amp; maintain ecosystem function.</li> </ul> <p><b><u>How Project supports Restoration or Protection of Ecosystem Functions?</u></b>                  This project would establish riparian corridor protection of an intact corridor, and enhance fish habitat through restoration projects.</p> <p><b><u>Project’s Spatial-Temporal Scale of Influence:</u></b>                  Johnson Creek corridor above SR 101, east of Sequim</p> <p><b><u>Timing Needs and Sequencing Requirements (project readiness):</u></b>                  There are landowners along Johnson Creek who are interested in working with the Land Trust when funding is available.</p> <p><b><u>Range of Estimated Costs:</u></b>                  One of the properties that is considered for conservation is 155 acres, which is probably \$15,000 per acre fair market value, and conservation easements, on average, are about half of fair market value, \$7,500/acre. The incidental costs, including survey, appraisal and review, legal, title, forest management plan, can add up to \$30,000. Large wood projects could be \$50-100,000. This brings the total project cost to \$1.18 million.</p> <p><b><u>Watershed priority &amp; watershed area (which WRIA):</u></b>                  WRIA 17</p> <p><b><u>Other Key Information, especially any relationship to previous or current projects:</u></b>                  It is likely that this project would score well with the Rocky Mountain Elk Foundation because it’s an active elk migration corridor. NOLT will pursue funding them RMEF and other grant sources.</p>	NOLT/JSKT

<p>09044</p>	<p><b>Jimmycomelately Riparian Protection</b></p> <p><b>Project Description:</b> A ¾-mile length of riparian forest along Jimmycomelately (JCL) Creek will be permanently protected through the purchase of a conservation easement or fee-simple property from a single land owner. This is the only unprotected riparian property within the anadromous zone, and is the remaining major element for the restoration/protection of the lower watershed. Riparian forest and channel conditions on the property are excellent. All the JCL salmonids spawn and/or rear in this reach: HC/ESJDF summer chum and Puget Sound steelhead (both ESA-listed), coho, and cutthroat.</p> <p><b>Why the Project is Needed (limiting factors addressed):</b> In the late 1990's, JCL summer chum salmon were nearly extirpated, due in large part to habitat degradation. Stock supplementation activities have recovered the chum population to significant numbers. Extensive habitat restoration work was recently completed in the estuary, adjacent nearshore, and lower ½-mile of stream channel. Immediately upstream of the restored stream channel is this ¾-mile stretch of privately owned, forested channel containing excellent habitat, which will be permanently protected by the project. Upstream of the private forest, JCL Creek is protected within state and federal forest lands.</p> <p><b>Benefit to Salmon:</b> This project will permanently protect 0.75 miles of important, high quality spawning and rearing habitat for all the JCL salmonids. Restored habitat downstream will also benefit from the protection of this area.</p> <p><b>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</b> Summer Chum Salmon Recovery Plan, page 85 and 99: "Protection, restoration and maintenance of the Jimmycomelately and Salmon/Snow watersheds are of paramount importance." The lower 1-2 miles of these watersheds must be restored and protected to effect and ensure recovery of the Strait population aggregate. "Protection of the freshwater reaches is the highest priority (for JCL Creek)."</p> <p><b>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</b> Ecosystem functions are protected by permanently protecting a mature conifer/hardwood riparian forest along 0.75 miles of stream channel. The protected corridor will extend at least 300-feet on either side (600-feet total) of the stream. No timber harvest, road building, or other development activities will be allowed to occur within this protected riparian forest. The project will link the currently protected stream reaches above and below the project site.</p> <p><b>Certainty of Project Success:</b> There is a single landowner, who appears willing, so certainty of success appears high.</p> <p><b>Address Timing Needs &amp; Sequencing Requirements:</b> Because the landowner appears willing, this project should proceed immediately. Otherwise there is a possibility that the property could be logged, sold, or developed.</p> <p><b>Cost Appropriateness:</b> Sales price will be tied to fair market value as determined by an appraisal. Land prices are currently favorable.</p>	<p>NOLT &amp; JSKT</p>
<p>11094</p>	<p><b>Chicken Coop Road Culvert Replacement Project</b></p> <p><b>Project Description:</b> Clallam County Public Works proposes to replace a deteriorating non fish-passable culvert located at MP 1.4 of Chicken Coop Road with a fish-passable pipe, potentially opening up 1.4</p>	<p>CC</p>

	<p>miles of Chicken Coop Creek to coho and winter steelhead. The existing culvert is a 24" steel pipe, rusting at the bottom, and not adequately sized to pass flows. The resulting backwater has caused bedload to accumulate throughout the pipe, causing almost complete blockage. The backwater has also caused erosion of the road shoulder at the inlet, further adding to siltation of Chicken Coop Creek during storm flows. A second, 18" steel culvert, located 24" above the stream bed serves as an overflow, however his pipe does little to aid fish passage. The proposal is to replace both culverts with a single 6 foot culvert, meeting WDFW guidelines for road culverts (2003).</p> <p><b><u>Why the Project is Needed (limiting factors to be addressed):</u></b>          According to the WRIA 17 Salmon and Steelhead Limiting Factors (2002), this culvert is a total barrier. It is leaking through holes in the bottom and eroding away road fill. The Action Recommendation is to replace this culvert, addressing the factors of Access and Passage. If this is replaced in conjunction with the total culvert barriers at Highway 101 and Old Blyn Highway it will open up 2.7 miles of fish habitat. This recommendation is repeated in the Elwha-Dungeness Watershed Plan, WRIA 18 (2005).</p> <p><b><u>Benefit to Salmon:</u></b>          According to the WDFW Salmonscape mapping, Chicken Coop Creek has potential use by coho and winter steelhead, although the barriers at Old Blyn Highway and Highway 101 make this creek inaccessible at present. Trap surveys done by the Jamestown Tribe in 2008 show use by coho, cutthroat and steelhead/rainbow juveniles below Highway 101. If the barrier at Chicken Coop Rd. were to be removed, (along with the barriers at Old Blyn Highway and Hwy 101) approx. 4,200 linear feet of stream above Chicken Coop Rd. would become accessible to winter steelhead and 7,500 linear feet of stream accessible to coho.</p> <p><b><u>Which Salmon Recovery Plan Objectives does this Project Meet and How?</u></b>          At present a recovery plan for ESA-listed winter steelhead is being developed, however, many aspects of the Puget Sound Recovery Plan (2007) for Puget Sound Chinook can be applied to steelhead and coho, specifically:</p> <ul style="list-style-type: none"> <li>• The Protection of Physical Habitat and Habitat-Forming Processes.</li> <li>• Water Quality and Instream Flows</li> <li>• Also:             <ul style="list-style-type: none"> <li>➢ Protect key fresh- and saltwater processes and habitats from physical or biological disruptions</li> <li>➢ Reduce the risk and damage from catastrophic events.</li> </ul> </li> </ul> <p>These goals would be met by re-establishing a natural flow to allow fish access to existing habitat. The larger culvert would be able to pass storm flows, reducing the input of sediment from road erosion and possible catastrophic failure (and resulting impacts to fish) of the road.</p> <p>Additionally, the project attains two issues of the Draft Salmon Habitat and Ecosystem Conservation Plan (Clallam County 2000); specifically:</p> <ul style="list-style-type: none"> <li>• Avoid stream crossings by roads wherever possible, and where one must be provided, minimize impacts through choice of mode, sizing and placement.</li> <li>• Preserve the hydrologic capacity of any intermittent or permanent stream to pass peak flows.</li> <li>• Prevent erosion and sediment runoff during construction.</li> </ul> <p>By following the WDFW Design of Road Culverts for Fish Passage (2003), the new culvert will ensure passage of a 100-year peak flow and allow fish access. The project will be constructed by Clallam County Road Maintenance crews. Clallam County is a member of the Regional Road Maintenance Program and adheres to all elements of that agreement, including the incorporation of BMP's. Our work is approved under the 4(d) Rule for Limit 10 (Routine Road Maintenance), and has received concurrence from the National Marine Fisheries Service. Crews have received training in BMP use and in-water work to prevent erosion and sedimentation runoff during construction.</p>	
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	<p><b><u>How Project supports Restoration or Protection of Ecosystem Functions?</u></b></p> <p>According to the Elwha-Dungeness Watershed Plan, WRIA 18 (2005):</p> <p>“Chicken Coop experiences excess sedimentation and sporadic water quality violations. There are several fish passage blockages as well as degraded fish and wildlife habitat...Chicken Coop Creek is the second largest watershed in the Sequim Bay Basin. It suffers from the effects of numerous culverts throughout the watershed and has experienced various episodes of excessive sediment. These sediments may contribute to the occasionally intermittent presence of surface flow - a condition that has been identified as potentially the most significant limiting factor for restoration of anadromous stocks.”</p> <p>Replacing this culvert will potentially open up 7,500 linear feet of former productive habitat for coho (4,200 linear feet for steelhead), restoring this function. The current deteriorated culvert is contributing to sedimentation from the road erosion, and a possible catastrophic event from a road failure. Replacement will reduce sedimentation which has been contributing to the intermittent surface flow.</p> <p><b><u>Address the Project’s spatial-temporal scale of influence:</u></b></p> <p>Replacing the culvert will lead to immediate fish accessibility for the portions of Chicken Coop Creek above the road. However, total use of Chicken Coop Creek depends on replacing the culverts at Old Blyn Highway and Highway 101. The Highway 101 culvert is reportedly scheduled for repair (Elwha-Dungeness Watershed Plan, WRIA 18, 2005). The crossing at Old Blyn Highway is proposed to be improved, as part of the Jamestown S’Klallam Tribe’s planned interchange with Highway 101 (if funded).</p> <p><b><u>Timing Needs and Sequencing Requirements (project readiness):</u></b></p> <p>There is no sequencing needed for this project. The culvert replacement could be done during the WDFW 2011 Allowable Work Window (July 16 – September 15). Since the project would be done by the County’s own road crew, there would be no advertisement period and no bid award. Construction drawings would be done in-house. Work could begin as soon as materials were delivered and would last 3-4 days. Since Chicken Coop Road is open at both ends, the road could be closed to traffic at the site, making the actual installation time considerably shorter than would be required with a partial closure.</p> <p><b><u>Range of estimated cost:</u></b> \$50,000 to \$75,000.</p> <p><b><u>Watershed Priority and watershed area project is located in:</u></b></p> <p>This is the Sequim Bay Subbasin of WRIA 17, Chicken Coop Creek Watershed is identified as WRIA 17.0278. This was given a score of 1.22 in the NOPL 2010 Work Plan Ranking. Watershed planning was done Under Elwha-Dungeness Watershed Plan, WRIA 18 (2005). Repairing the culvert is listed as recommendation #1 under “Habitat.” Controlling sedimentation is listed as recommendation #1 under “Water Quality.”</p> <p><b><u>Other Key Information:</u></b></p> <p>This culvert has been a barrier to fish for at least 15 years, in other words, fish have not been able to access the 1.4 miles of Chicken Coop Creek above the road for 15 years. Once the Highway 101 culvert and the Old Blyn Highway culverts are repaired, a potential 2.7 miles of stream would be useable for fish (Limiting Factors Analysis 2002).</p>	
09050.1	<p><b>Clallam County Roads Culvert Inventory</b></p> <p><b><u>Projection Description:</u></b></p> <p>The municipality of Clallam County encompasses an area of 1,752 square miles that is drained by thousands of miles of streams. It also maintains a road network that includes approximately 850 miles of asphalt and gravel roads. These roads cross numerous drainages</p>	LEKT/ CC

	<p>that support anadromous and resident trout populations. Many of these roads were built prior to the enactment of the Hydraulic Act and as a result their stream crossing structures do not meet modern fish passage criterion. This project will identify all stream crossings within county jurisdiction using GIS Tools by watershed. The stream network affected by the road system will also be classified by gradient and confinement criteria within each watershed. This analysis will produce a population of culvert sites and potential stream habitat upstream affected by those crossings. Individual culvert sites will then be field surveyed to assess their impacts to fish passage using the WDFW (2009) level A assessment. From these data a prioritized list of fish passage improvement projects will be generated by watershed and by county ownership. The over-all goal is to identify and replace barrier culverts and to restore unimpeded fish passage to historical spawning and rearing habitat upstream with structures that meet fish passage criteria. This project will help Clallam County and its partners identify those barriers and compete for the resources necessary to correct barriers over time.</p> <p><b><u>Limiting Factors Addressed:</u></b>          This project will result in a prioritized list of fish passage barriers on Clallam County road ownership. Currently Clallam County does not have such an inventory and its road culverts are replaced only when public safety is threatened or there is an engineering reason to do so. As a result, numerous migration barriers remain unidentified and are not being targeted for systematic correction. Barrier correction and the restoration of access is fundamental to salmon restoration. Indeed, in a recent review of watershed restoration priorities Roni et al. (2006) recommend the correction of human caused fish passage barriers as the first and greatest priority for restoring salmon habitat in Pacific Northwest watersheds.</p> <p><b><u>Benefits to Salmon:</u></b>          Because of the geographic scope of this project, numerous stocks of salmon ranging from Puget Sound coho to Olympic Peninsula chum would be positively affected. Restoring access to historically utilized habitats has perhaps the greatest cost-benefit of any salmon restoration project type. If barriers are not identified they will not be proactively repaired, except at the end of their life expectancy. Many municipalities of the state of Washington currently do not have the tools or fiscal resources to carry out such a fish passage correction program.</p> <p><b><u>Recovery Plan Objectives:</u></b>          Clallam County currently contains several listed species including: Ozette Lake Sockeye, Puget Sound Steelhead, Puget Sound Summer Chum, Puget Sound Chinook, and Puget Sound/WA Coastal Bull Trout. Recovery plans have been developed for all of these ESU's with the exception of Puget Sound Steelhead. Restoration of access to historically utilized areas is included in all these plans. However this project is more likely to benefit species such as coho and steelhead which utilize tributaries as opposed to chinook which primarily utilize mainstem and large river side channels.</p> <p><b><u>Restoration or Protection of Ecosystem Function:</u></b>          This project restores ecosystem function by leading to a process that restores access for anadromous and resident salmonids to habitats blocked by undersized, over-steepened, perched or velocity barrier culverts across Clallam County. Replacement of these structures over time will also restore ecosystem function by allowing unimpeded transport of sediment and large wood. Degraded channel conditions often occurs immediately downstream of undersized culverts and replacement of these structures will result in additional habitat recovery benefits</p> <p><b><u>Spatial/Temporal Influence:</u></b>          This project has a broad impact in terms of identifying barriers in multiple watershed in WRIA 17-19. It could (and should) be coupled with a similar effort in WRIA 20 which has a different lead entity group (NPCLE).</p> <p><b><u>Project Readiness:</u></b>          This project could be completed within 1-3 years of funding. It will require a considerable</p>	
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	<p>amount of GIS time and each culvert requires approximately half a day to locate and survey.</p> <p><b>Cost:</b> \$300,000--450,000</p> <p><b>Watershed Priority:</b> Due to the geographic scope of this project, which encompasses survey activities in multiple watersheds, it is impossible to assign a priority value according to the system adopted by NOPLE.</p> <p><b>Miscellaneous:</b> This project is modeled after LEKT watershed analysis in Salt Creek (McHenry et al 2006). That project identified multiple culver barriers (31) that affected at least half of the historically affected habitat in the watershed. Seven barriers were identified on Clallam County ownership. Using state and federal grant sources, LEKT in partnership with Clallam County has corrected six of those barriers. The final barrier is currently being analyzed for correction during the summer of 2011.</p>	
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**Non-Capital Projects**

**HATCHERY**

09048	<p><b>Elwha River Native Steelhead Brood Development Project</b></p> <p><b>Likely Sponsors:</b> Lower Elwha Klallam Tribe</p> <p><b>Funding Request:</b> \$138,342</p> <p><b>Brief Description of Project:</b> An alternate winter steelhead broodstock is being developed for use in the Elwha River. This new stock based upon the native wild steelhead found in the Elwha River will permit the phase-out of the use of the Chambers Creek winter steelhead salmon in the Elwha River. This project, initiated as a captive brood program (redd pumping employed to capture eyed eggs and pre-emergent fry) is now expanding to include a smolt production component. Currently 1,700 fish (age 0 to age 4) are being reared to maturity (age 4) at the hatchery. Upon reaching maturity, adults will be spawned and the resulting offspring will be reared to age 2 smolts for release. Fish will be released both from on-station and at remote release locations.</p> <p>This effort will permit discontinuance of the Chambers Creek stock and will result in the development of a new hatchery-based population that will be used to promote steelhead recovery and assist in achieving the goals of river restoration as identified in the Elwha River Fish Restoration Plan (NOAA Technical Memorandum NMFS-NWFSC-90).</p> <p><b>Project Description:</b> The goal of the program is to develop a hatchery stock of winter steelhead salmon based upon a natural-origin late-timed winter steelhead (Elwha River). This stock is currently present in the river at critically-low levels. This program will permit the replacement of enhancement efforts currently supported by winter steelhead salmon of Chambers Creek origin (South Puget Sound) and will assist in the amplification of the depressed native population.</p> <p>The production methods employed and project goals have been developed in consultation with scientists from NOAA Fisheries, USFWS, NWIFC, WDFW, and NPS (Olympic National Park). This program will be dependent upon on-going annual program reviews – annual consultations/program reviews have proved to be an import component to ensuring the success of this effort and providing options to manage the project adaptively. Reviews/consultations will continue to be a critical component to the success of this production effort through its duration.</p>	LEKT
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	<p>This enhancement effort was begun in 2005 as a captive brood-based program and now includes individuals from four brood years (2005, 2006, 2007 and 2008). The program methods include: Capture of eggs and fry from redds (redd pumping), inserting a passive integrated transponder tag (PIT tag) into each fish being reared in captivity to adulthood to permit identification of individuals throughout their residency at the hatchery, conducting genetic analysis of each fish reared in captivity to adulthood to determine parental lineage and assist in the development of spawning matrices, rearing each captive brood fish to age 4, spawning of fish, incubation of eggs and rearing of offspring to age 2 smolts, on-station and off-station releases of smolts.</p> <p><b><u>Project Need:</u></b> The project meets needs identified in areas critical to salmon recovery in the region: The target stock is currently present in the river at critically-low levels. This program will permit the replacement of enhancement efforts currently supported by winter steelhead salmon of Chambers Creek origin (South Puget Sound) and will assist in the amplification of the depressed native population and will act to reduce the potential for negative genetic and ecological interactions between the native stock and the imported stock.</p> <p><b><u>Significance to Hatchery Reform Implementation:</u></b> This project addresses a specific recommendation <i>from a HSRG Regional Review</i>. Review of the Eastern Straits region by the HSRG identified the winter steelhead stock currently used at the Lower Elwha Fish Hatchery (Chambers Creek origin) as being inappropriate for use in the recolonization of the upper watershed following dam removal, and that any stock conservation program developed by co-managers in the Elwha River Fish Restoration Plan (NOAA Technical Memorandum NMFS-NWFSC-90) should use a more appropriate stock of steelhead.. The goal of this production effort is to use the late timed Elwha River origin winter steelhead stock to replace the existing Chambers Creek winter steelhead population. Once increasing returns of this new hatchery-origin stock is observed the use and production of the Chambers Creek population will be ramped-down and may be discontinued.</p> <p><b><u>Relevance to Salmon Recovery:</u></b> This project will increase the abundance of a natural stock by selectively amplifying the total population and using this stock as the basis for a new hatchery-origin population. The Hatchery Reform effort in the state of Washington has recognized the importance of protecting genetically-unique threatened native winter steelhead stocks through importation into the hatchery and has funded similar protection and enhancement efforts in other Puget Sound watersheds. This program will help to protect a genetically unique and separate natural-origin stock that has declined to critically-low levels (less than 100 adults per season). Increases in the number of natural-origin steelhead and phase-out of the production of Chambers Creek origin fish will reduce the potential for harmful genetic and ecological competition between the native stock and the non-Elwha River origin winter steelhead in the system.</p> <p><b><u>Proposed Starting and Ending Dates:</u></b> This is an ongoing project, initiated in 2005 and projected to continue through 2018. This funding is to support program efforts beginning August 2010 and continuing through June 30 2012.</p> <p><b><u>Certainty of Project Success:</u></b> This project has a high degree probability of success. It is based upon utilization of existing hatchery methodologies/technologies and bolstered with routine semi-annual guidance consultations held with project cooperators (USFWS, NOAA Fisheries, NPS, and WDFW).</p>	
11095	<p><b>Elwha Fish Propagation</b></p> <p><b><u>Project Title:</u></b></p>	LEKT/ WDFW/ ONP

	<p>Maintenance of Elwha River Fish Populations During Removal of the Elwha River Dams</p> <p><b>Project Description:</b> The two Elwha River Dams will be removed beginning in September 2011 and continuing for three years. Dam removal on the Elwha will restore access to over 70 miles of mainstem and tributary habitat. The project as a whole will also restore those processes which are necessary for a functioning ecosystem.</p> <p>The dam removal process is anticipated to result in episodic periods of high turbidity, often exceeding 1,000 ppm and occasionally exceeding 10,000 ppm. These levels are known to result in the direct mortality of fish. It is critical to protect the native populations of salmon in the Elwha River during these periods of high turbidity.</p> <p>In order to protect native fish populations during dam removal, two hatcheries on the river (WDFW Elwha Rearing Channel and the Elwha Tribal Hatchery) will be utilized as safe refuges. Chinook, coho, steelhead, chum, and pink salmon will all rely to some extent on hatchery supplementation. The Chinook and steelhead populations are currently listed as “threatened” under ESA. Details of the hatchery supplementation strategy for the Elwha Project are found in the Elwha Fish Restoration Plan (Ward et al, 2008). The hatchery program is intended to be an interim action (~10 years) to support fish through dam removal and the years following removal when colonization of the watershed is occurring.</p> <p>Funding has been secured through the Elwha Project and federal stimulus programs for construction of a new tribal hatchery. In addition, both Washington State and tribal funding is available for partial operations of the two hatchery facilities. However, additional funding is needed to fully implement the actions described in the Elwha Fish Restoration Plan. Approximately \$200,000 per year is needed for the program (not including the steelhead program which has been identified as a separate stand-alone project).</p> <p>The Elwha River has the highest ranking in the NOPLE strategy (score of 5).</p> <p>Stock preservation has been rated as the highest priority task to be implemented in the Elwha River during dam removal.</p>	
<b>HARVEST MANAGEMENT SUPPORT</b>		
09064	<p><b>Dungeness Improved Fisheries Enforcement</b></p> <p><b>Project Description:</b> Harvest management calls for effective enforcement of harvest regulations and implementation of orderly fisheries. Currently fisheries are limited in the vicinity of the Dungeness watershed. However, control of the limited existing fisheries and protection against poaching to which Chinook are particularly vulnerable during the low flow summer months, requires enforcement personnel to patrol the river and proximal marine waters. Two additional officers are needed for effective enforcement of closures and to ensure orderly fisheries.</p> <p>Currently, enforcement personnel are spread thin and do not sufficiently cover enforcement needs. The addition of two officers would meet present requirements and help ensure that the harvest management provisions of the recovery plan are met. If the this program is not funded as part of the three year plan, the existing risk of illegal harvest of already small numbers of Dungeness Chinook will continue.</p>	WDFW/ JSKT
<b>FUTURE HABITAT PROJECT DEVELOPMENT</b>		
09054	<p><b>Elwha Conservation Planning</b></p> <p><b>Project Description:</b></p>	NOLT, LEKT & CC

	<p>This non capital project follows the Elwha Fish Recovery Plan's recommendation to develop a long term strategy for purchase or development of conservation easements on floodplain &amp; estuary property outside of the ONP (p.80). The Plan states, "Restoring and maintaining physical processes that form habitat in the mainstem Elwha River is the highest priority following dam removal (p.75). North Olympic Land Trust will work with willing private landowners to create plan to maintain physical processes on private land in the Elwha watershed, including Indian Creek and the Little River, specifically through conservation easements and in some cases fee simple acquisition of important lands. This project is a strategic planning process that identifies private properties in the Elwha watershed based the recommendations and system of prioritization set forth in the Elwha River Fish Restoration Plan's. This planning process will assess ecosystem function, market value, and landowner willingness on a parcel-by-parcel basis to develop a plan for land acquisition through permanent conservation easements and fee simple acquisition. The outcome of the project will be a prioritized list of properties to begin acquiring as early as 2011. This project will help achieve NOPL's goal to restore and maintain ecosystem function on the North Olympic Peninsula for the entire watershed through strategic planning designed to create the greatest ecological benefits for listed species.</p> <p>All limiting factors listed for the Elwha River Protection can be address by protecting the best existing salmon habitat and ecosystem function on private land, which can only happen through voluntary conservation tools such as acquisition and conservation easements, non regulator conservation tools that this project addresses.</p> <p>This project will create a road map to protect habitat for ESA listed species in the Elwha River in addition to multiple stocks of fish – all that depend on existing quality and quantity of habitat in marine and freshwater. According to the Puget Sound Recovery Plan, "any further reduction in habitat quality and quantity will require more restoration to achieve recovery goals...Protection is needed at the individual habitat site as well as the <b>ecosystem scale</b> to ensure the processes that create habitat to continue to function (p. 353). This is why it is paramount to follow the newly emerging tenet for species recovery - 'protect the best and restore the rest'.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this project meet and how?</u></b></p> <ol style="list-style-type: none"> <li>1. Puget Sound Recovery Plan – "protect existing environmental functions in both urban and rural areas using the array of protection tools available." (357).</li> <li>2. Puget Sound Partnership – Protect Existing Habitat: Land Acquisition/Protection Plan</li> <li>3. NOPL Recovery Strategy 2008 – Goals 2 &amp;3.</li> <li>4. Salmon and Steelhead Habitat Limiting Factors of Juan de Fuca – Recommendation: "Acquisition/conservation easement access and set back of structures constructed within the channel migration zone( p.162).</li> <li>5. Elwha River Fish Restoration Plan – " Consideration should be given to developing a long-term strategy for purchase or development of conservation easements on floodplain and estuarine property outside ONP. Unconstrained reaches of the Elwha River where lateral migration can occur should be of the highest priority...significant parcels of floodplain are privately owned, some of which may not be adequately protected but local land use regulations to meet the goals of river restoration. These lands may be logged or converted to housing or other uses that are not compatibility with long term restoration. <u>It is conceivable that a corridor from the ONP boundary on the south to the LEKT reservation could be targeted for protection in cooperation with an appropriate partnership between landowners and conservation organizations.</u> If successfully implemented, such a corridor would link floodplain and estuary habitats in the lower river with pristine habitats within ONP. The Elwha River could represent one of the largest, largely intact watersheds in the conterminous United States (p80-81).</li> </ol>	
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	<p>Acquiring properties with important habitat as opportunities arise has been a common trend in salmon recovery. Though worthy, this approach does not reap the same ecological benefits as landscape scale conservation planning, which this project would accomplish.</p> <p>With funding, North Olympic Land Trust has the organizational capacity to complete this project within 2 years, has in house GIS capability, and will rely on its project partner, LEKT for technical review of priority habitats and GIS. This planning process will dovetail with North Olympic Land Trust’s efforts to create a 100-year conservation plan for Clallam County by focusing on salmon and steelhead recovery in the Elwha watershed. The Land Trust is now building a constituency to support rapid implementation of conservation plans through partnerships and funding opportunities. This project will lead to voluntary conservation easements and land acquisitions that protect the best existing habitat and ecosystem function for salmon and steelhead. Non regulatory protection efforts – such as conservation easements and fee simple acquisitions negotiated by local land trusts - has a proven track record for protecting private land with important habitat and ecosystem function in perpetuity. North Olympic Land Trust has already protected over 90 acres in the Elwha watershed and will soon protect an additional 120 in the Little River Valley.</p> <p>Timing for planning for acquisition is ideal since the Elwha Recovery Plan and WRIA 18 plan are finalized and both recommend protecting habitat as a major priority for recovery. This project will develop an achievable plan for strategic acquisitions of parcels with the best existing habitat and ecosystem function through perpetual conservation easements and fee simple acquisition, which will lead to capital acquisition projects.</p> <p>The cost of the project covers staff time for 2 years of work doing outreach, GIS, coordinating appraisals, reviewing title, parcel prioritization, and compiling a final report. The cost of outreach material and postage for landowners is included, including preliminary appraisals and title review. The Lower Elwha Klallam Tribe is the major partner for this project and will provide GIS and technical review of prioritized habitat.</p>	
09055	<p><b>The Elwha Nearshore Action Plan</b></p> <p><b><u>Project Description:</u></b>          The Elwha watershed consists of 321 square miles of watershed, 20 linear km of nearshore, and 90 acres of estuary habitat critical for numerous salmon species including ESA-listed Puget Sound and Columbia River Chinook, bull trout, and steel head, and Hood Canal/ Eastern Strait of Juan de Fuca summer chum. In-river damming, shoreline armoring, and lower river and estuary alterations have resulted in significant impact to the function of the nearshore Elwha. Eighty three percent of the Elwha River is within the Olympic National Park. In contrast, the majority of the Elwha nearshore is in private ownership, and experiencing a high development pressure. Dam removal through the Elwha Ecosystem Restoration project will reopen 70 miles of riverine habitat and reestablish river sediment processes but doesn’t include any nearshore restoration. This project fills completes Elwha ecosystem restoration by developing and implementing a conservation easement and protection action plan for the Elwha nearshore with scientifically measurable outcomes and monitoring to do so.</p> <p><b><u>Limiting Factors, Benefit to Salmon, Project Success, Recovery Plans Timing &amp; Other Key Information:</u></b>          This proposal is consistent with, and builds upon, the goal of the federal Elwha Fisheries Restoration Act (1992) and associated Elwha river dam removal project by restoring and protecting riverine/ nearshore functional linkages. It is identified as a top priority in the NOPLE three year strategy. Shared Strategy (2007), and the Olympic Peninsula Chapter of the Puget Sound Chinook recovery plan.</p> <p>Habitat function has been degraded, migratory and rearing habitat for both Puget Sound and Columbia River stocks of Chinook salmon, as well as steelhead, coho, and chum salmon, will</p>	CC & WDFW

	<p>continue to be degraded and inaccessible. Long term outcomes if not funded will be current habitat function within the Elwha drift cell will be at high risk due to development; and full ecosystem restoration in the Elwha system, due to degraded state of Elwha nearshore, will occur. Nearshore restoration from restored riverine sediment processes will be partial and competing immediately and continuingly with development pressures.</p> <p>The project addresses both priority need and opportunity. A number of landowners have expressed an interest in participating in conservation easements, property acquisition, and restoration projects, as well as a high interest in water quality monitoring. Resources have not been available to move forward effectively. Level of urgency is high; dam removal is slated to begin in 2012. Likelihood of success is high.</p> <p>The project will create and initiate the trajectory for substantive permanent protection and restoration of a critical component of Elwha ecosystem that is currently at risk, by providing comprehensive long term conservation, protection, and restoration of the Elwha nearshore, which is not currently addressed in the Elwha restoration project. It will provide baseline and resulting water quality monitoring data that indicate measurable and scientifically defensible environmental improvement, and does so while incorporating the concept of ecosystem services and collaborative stewardship mindset with local landowners.</p> <p>Also the project builds on the Elwha Nearshore Restoration Strategy, developed in 2005 which addresses both the before and after and control and treatment elements of assessing protection and restoration success (Shaffer et al 2008). The assessment has been developed to accommodate the high variability inherent in the Elwha nearshore. Primary elements for monitoring are standard fish use techniques to define basic ecological indices and fish metrics, and water quality metrics in the Elwha and comparative estuary and embayed shorelines. Sampling for fish use, will be conducted bi-monthly for fish use, and basic water quality using standard PSAT protocol. Data will be quantified to provide the baseline for both post dam removal, and post protective action assessment.</p> <p>The work will continue to be integrated with the Elwha Nearshore Consortium, a group of scientists, managers, and citizen groups and stakeholders that are dedicated to understanding and promoting the restoration associated with the upcoming dam removals. Ongoing collaborative work includes citizen outreach workshops (Elwha Conversations), annual newsletters (Elwha nearshore newsletter), and citizen science monitoring work with landowners and local college students.</p>	
09059	<p><b>Port Angeles Harbor Basin Program</b></p> <p><b>Project Description:</b>          This program sponsored by the North Olympic Peninsula Lead Entity and the Clallam Marine Resources Committee; will facilitate a planning process that brings stakeholders in the PA Basin area together to talk about the future of the PA nearshore, and explore the potential for restoration and protection. There are some planning and development activities underway, but not all of the critical stakeholders are always involved and there may also be visions for the greater region which need to be explored.</p> <p>There are many individual projects currently included on the N. Olympic Peninsula Lead Entity's 3 year workplan that are in the PA Basin, such as Ediz Hook A-Frame Site Shoreline Restoration, Ennis Creek Habitat Restoration &amp; Protection, and Valley Creek Estuary Restoration. There are also some new projects being proposed for the Lead Entity's 2009 Workplan. There are also longer term projects such as the restoration of the mouth of Ennis Creek. The Clallam MRC has its own workplan of proposed nearshore projects.</p> <p>This program will help tie all these individual projects into the larger picture, with a stakeholder process that will look at a broader scale and coordinate the various activities into a grand visioning process for the greater Port Angeles harbor area ecosystem.</p>	NOPLE & MRC

	<p><b><u>Why The Project is Needed:</u></b>          WRIA 18 Limiting Factors Analysis: “The Port Angeles harbor historically functioned as a large estuary, providing high quality rearing areas for many salmonid species. The harbor has been extensively altered from a variety of cumulative physical effects... The following salmonid habitat restoration actions are recommended for nearshore and subtidal marine areas within WRIA 18:</p> <ul style="list-style-type: none"> <li>• Restore shoreline sediment transport from the Elwha River and the feeder bluff between the Elwha River and the west end of Ediz Hook</li> <li>• Restore the littoral drift from marine bluffs to the west of Morse Creek</li> <li>• Minimize the growth of <i>Ulva (spp)</i> by eliminating point and non-point source nutrient delivery to shallow embayments with limited tidal flushing</li> <li>• Evaluate the effects of shoreline armoring on shoreline sediment transport and nearshore sediment composition, and implement corrective actions, where appropriate</li> <li>• Remove or reconfigure the Rayonier pier to provide unrestricted nearshore salmonid migration and longshore sediment transport.”</li> </ul> <p>Many of these restoration actions will be coordinated through the visioning process. This program would improve nearshore habitat for Puget Sound Chinook and other salmonids using this migration corridor. , It will also improve forage fish habitat and feeding and resting areas for juvenile salmonids.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</u></b></p> <ol style="list-style-type: none"> <li>1. Chapter 2.11 STRAIT OF JUAN DE FUCA MARINE NEARSHORE ENVIRONMENT in the <b>Elwha-Dungeness Watershed Plan Water Resource Inventory Area 18 (WRIA 18) and Sequim Bay in West WRIA 17</b> describes the “extensive loss and impairment of nearshore and estuarine habitat has occurred within WRIA 18 and throughout the Puget Sound Estuary/Strait of Juan de Fuca region.” This visioning would start the process of restoring the degraded marine shoreline.</li> <li>2. <b>The Puget Sound Chinook Recovery Plan, Chapter 3 - Habitat Factors Affecting Puget Sound Chinook Salmon and Bull Trout</b> also references how habitat modifications have reduced the amount of salmon habitat that was historically available.</li> </ol> <p>With a unified vision, the restoration of the Port Angeles Harbor Basin can restore a larger area by (1) identifying other projects that are needed, (2) helping connect the various projects and partners in the basin, (3) identifying areas of overlap between projects and partners, (4) helping to prioritize the projects already planned, (5) facilitate cost sharing, and (5) reduce the potential for tying things up in litigation.</p> <p>Taking the basin-wide approach with stakeholder involvement increases the certainty of project success. Stakeholders will be working towards restoration of the Port Angeles Harbor Basin with one vision, and restoration will not be occurring in a piecemeal way.</p> <p>We need to embark upon this visioning process soon because critical habitat has become available recently, and other activities are underway to make plans for how land could be utilized in that area. This visioning process will ensure that the restoration activities are embarked upon in a unified way.</p> <p>Funding will be needed for a facilitator, food for participants, potential room rental, meeting supplies, and copying costs. Costs will be fairly low for the benefits that’ll be reaped now and into the future.</p> <p>The N. Olympic Lead Entity for Salmon and Clallam Marine Resources Committee would be the program sponsors.</p>	
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<p>09063.1</p>	<p><b>Dungeness River Habitat Resurvey</b></p> <p><b>Watershed Priority:</b> 4.76</p> <p><b>Project Description:</b>                  Baseline habitat monitoring is a basic need to understanding whether habitat conditions are improving or degrading. In 1993, JKT along with Jack Orsborn and Steve Ralph completed a Dungeness watershed-wide habitat survey. Since 1998, the Tribe, County, CCD, and others have engaged in habitat restoration throughout the lower 10 miles of river. What is the habitat trend for the Dungeness? The purpose is to redo the habitat survey, to look at trends in habitat conditions at a watershed level, and additionally identify areas of concern.</p> <p><b>Why the Project is Needed (limiting factors addressed):</b>                  Since the report was written in 1993 (17 years ago), we have had one 25-50 year flood event, three 10 year flood events, two 5 year flood events, and ten 2 yr flood events (some years have more than one major flood). Each flood brings a change to habitat conditions and potentially channel location. With four ESA-listed salmonids, it is important to update our knowledge of habitat conditions in order to better plan restoration projects.</p> <p><b>Benefit to Salmon (how does it address stock status &amp; trends):</b>                  This is the habitat for the four ESA list salmonids in the Dungeness. In this survey, we will GPS habitat features for better ESA planning and discussion. Where should we target scarce restoration/protection resources? Where has habitat conditions significantly changed (better or worse) in the last 17 years?</p> <p><b>Specific Salmon and Char Stocks that will Benefit.</b>  <b>ESA-listed:</b> Puget Sound Chinook, Puget Sound steelhead, Hood Canal/Eastern Strait of Juan de Fuca summer chum, Coastal-Puget Sound bull trout. <b>Non-listed:</b> coho, pinks, fall chum, cutthroat.</p> <p><b>Which Salmon Recovery Plan/Watershed Analysis or Plan Objectives does this Project Meet &amp; How?</b>                  NOPLE 2011 Draft Strategy Table C: Recommended actions for Dungeness River and the Puget Sound Recovery Plan, page 325. Both plans recommend "restoration of the lower river floodplain..." and "protect existing functional habitat within the watershed." We do a fine job of counting fish with two or three WDFW habitat biologists walking the river every day for 2½ months. This spawning survey effort has lasted over the past 18 years. But counting fish is just one "H." This is a funding request for one habitat survey of survey intensity equal to one year of spawning surveys.</p> <p><b>Illustrate how Project supports Restoration or Protection of Ecosystem Functions:</b>                  How can we understand whether the ecosystem is functioning if we do not monitor it? Tetra Tech is doing an intensive monitoring of the Engineered Logjam project in the vicinity of RR Bridge; their habitat survey covers about 2/3 of a mile (they have monitored 2005, 2006, 2008, 2010). The Forest Service is monitoring the Dungeness to Gold Creek and the Gray Wolf up to the Forest Service Boundary (about RM 5, 2010 and 2011). Their survey will start upriver of the Klink Bridge (roughly RM 11.7). The Forest Service will require their surveyors to GPS logjams. What is missing is most of the lower river corridor, where all of our restoration effort has been concentrated to date.</p> <p><b>Scale of influence:</b>  <b>Spatial</b> - This survey will be GPS-based in order to create a habitat map of the river. The survey will run from the Dungeness River mouth to Klink bridge. With the Forest Service data, we will compare to the 1993 survey to track changes in habitat conditions in the watershed (see the large wood recovery map, this will be a similar spatial area). To the extent possible, data will be spatially mapped so that it can be presented to the Dungeness River Management Team, used for restoration planning, and other forums. <b>Temporal</b> – If funded,</p>	<p>JSKT, US Forest Service, Tetra Tech</p>
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	<p>our survey will be the summer of 2012, one to two years following the Forest Service monitoring.</p> <p><b><u>Certainty of Project Success:</u></b>                  Jamestown S'Klallam Tribe has completed several TFW habitat monitoring efforts. We now use a modified TFW survey protocol, and GPS logjams and pool/riffle boundaries. One of our technicians was on the survey crew with Steve Ralph. Another technician used to have his own business doing these kind of surveys. We expect to hire Steve to help with survey design and analyses, to provide continuity with the 1993 data collection. Steve Ralph wrote the original TFW habitat monitoring protocol.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>                  If funded, the project will be surveyed the summer of 2012. Data analysis will occur the fall and winter of 2012. The project is ready to go.</p> <p><b><u>Cost Range and Appropriateness:</u></b>                  \$75,000 assuming 30 survey days with two crews of three. We will survey from the mouth to Klink Bridge.</p> <p><b><u>Other Key Information especially any relationship to previous or current projects:</u></b>                  We will be using the Forest Service survey data for our analysis of habitat conditions and change since 1993.</p>	
09067	<p><b>Increase Recovery Capacity &amp; Support NOPLÉ-wide</b></p> <p><b><u>Project Description:</u></b>                  This program will build &amp; support increased capacity for habitat project sponsors, additional coordination with PSP, develop funding strategies, and further ESA recovery efforts. This will allow for funding diversification, increased project design and implementation, all of which will quicken recovery efforts. This meets all objectives (I through ix) for non-capital projects.</p>	NOPLÉ
<b>HABITAT PROTECTION</b>		
09049	<p><b>Create Stable-funded Incentive program</b></p> <p><b><u>Project Description:</u></b>                  Habitat protection is a priority action. Non-regulatory riparian protection incentives are successful and with sufficient funding could be more widely used. Currently a County sponsored riparian habitat protection program is funded by one-time only grant dollars. Through conservation easements, the program has contributed to protecting in perpetuity about 500 acres of marine and freshwater riparian habitat. The project protects high quality fish habitat and helps to support ecosystem function. Project partners include Clallam County, land trusts; willing private landowners; tribes; cities; state agencies, and local businesses.</p>	CC & CCD
09052	<p><b>Clallam County Map Roadside Ditches</b></p> <p><b><u>Project Description:</u></b>                  Streamkeepers of Clallam County monitors water quality in area streams on a quarterly basis. However, impervious surfaces in the LE area have increased in recent years, with a potential increase in the contribution of stormwater to roadside ditches. The quantity and quality of stormwater contributions from roadside ditches to stream channels need to be identified and a prioritized list of improvement projects must be developed. This project advances habitat protection and restoration and could become a baseline for stormwater quality monitoring.</p>	CC
09053	<p><b>Clallam Watertype Inventory and Assessment</b></p>	WFC

	<p><b>Project Description:</b>                  Errors in Washington State water type maps result in the under-protection of 40-60% of the fish-bearing stream network. Work by the Wild Fish Conservancy, Tribes, and others have systematically documented streams mapped incorrectly or not at all, limiting the effectiveness of habitat protection on private lands under local government land use and state forest practice regulations. Though water typing errors have been documented as a problem on managed timberlands, problems on private developed/developing lands are less well known. Washington State local governments make frequent use of the WDNR water type maps but do not have resources to validate their accuracy in land use planning permitting.</p> <p>The correction and updating of these water type maps are pivotal to the full protection of streams from development impacts, since fish-bearing streams are frequently misrepresented as non-fish-bearing, mis-located, or even missing from regulatory maps.</p> <p>Using visual and electrofishing surveys, Wild Fish Conservancy will document and correct water type classifications using established state protocols in approximately 60 sq miles of at-risk lands around fast-developing urban fringe areas prioritized by the NOPLE technical advisory committee. Using GPS and GIS, WFC will accurately map previously unmapped/incorrectly mapped water courses to ensure informed and responsible watershed management. WFC will incorporate assessment results in a web-based interactive GIS available to planners, landowners, and resource managers (see <a href="http://www.wildfishconservancy.org">www.wildfishconservancy.org</a>). WFC will also submit assessment results to WDNR for correction and update of state water type maps. In addition to corrected water type maps, this assessment will generate species-specific fish distribution data and identify restoration opportunities on lesser-known tributaries.</p> <p>The Clallam water type inventory and assessment “advances implementation of the recovery plan” (ii.) by improving local government information sources for the protection of critical areas under the GMA. The project would “advance habitat protection and restoration” (iii.) by improved on-the-ground resource protection for sensitive stream-riparian corridors, and by pinpointing small restoration opportunities on lesser known tributaries. The project would also “advance recovery of ecosystem function” (iv.) and “advance ecosystem awareness” (v.) through improved habitat protection and public awareness of the significance of individual stream segments passing through neighborhoods. Finally, the project Wild Fish Conservancy would “advance integration” (vi.) by linking habitat assessment with growth management policy implementation, and providing proactive assistance to private landowners seeking to protect fragile public resources on their land.</p>	
09070	<p><b>Assess implementation of CAO, SMP &amp; HPA ordinance.</b></p> <p><b>Project Description:</b>                  A ground-truth survey is essential to understand the status and effectiveness of regulations designed to protect habitat. Coupled with the tracking system described in (42), a ground-truthed assessment will be used as a tool for monitoring and adaptive management. Partners include Clallam County, cities, state agencies, tribes. The project can also be used as a tool to advance habitat protection and restoration.</p>	NOPLE, CC, COPA & COS
09071	<p><b>NOPLE Area Wide Increase compliance with ordinances &amp; codes</b></p> <p><b>Project Description:</b>                  The City of Port Angeles has recently hired a Code Compliance Officer. At this time the position is only funded as a 40% position. Recent efforts to strengthen the Environmentally Sensitive Areas Protection Ordinance have been successful and the city plans further code amendments to further strengthen the ESA Protection Ord. The enforcement sections of our codes are a little weak and will require political support and staff effort to strengthen. A community forestry program is being developed with the intent to increase the tree canopy cover in the city to increase stormwater interception, infiltration, and evapotranspiration.</p>	NOPLE, CC, COPA & COS

	<p>Clallam County DCD has revamped its code compliance program to include 2 Code Compliance officers and a group of active volunteers. Still, most compliance actions are limited to responding to complaints due to limited staff resources. Additional resources will help to increase compliance through active involvement in project inspection and monitoring at all stages of development. This program advances habitat protection.</p>	
09072	<p><b>NOPLE area wide update stormwater management program</b></p> <p><b>Project Description:</b> The City of Port Angeles is currently drafting programs to better manage stormwater, including LID techniques, elimination of combined sewer overflows (CSO), and Phase II NPDES requirements. The long-term goal of the County is to improve water quality through stormwater management. Salmonid recovery plans and watershed plans recommend a more comprehensive, collaborative stormwater management program that builds on existing local efforts. To most effectively advance salmonid recovery, the program needs to be extended to other areas of the county. Partners are county, cities, tribes, Clallam Conservation District, North Olympic Salmon Coalition.</p>	NOPLE, CC, COPA & COS
09073	<p><b>NOPLE Area Wide update Shoreline Master Program (SMP)</b></p> <p><b>Project Description:</b> The City of Port Angeles is mandated by the State of Washington to update its Shoreline Master Program by 2011. Review and update required to comply with new state requirements. Funding needed for staff support, public process, and supporting studies Clallam County updates will consider the findings and recommendations in <i>the Dungeness Watershed Salmonid Recovery Planning Notebook</i>. Updates of the SMP are identified as implementation actions in the salmonid recovery plans; will help to advance habitat protection and restoration; and will affect shorelines across the county.</p>	NOPLE, CC, COPA & COS
<b>WATERSHED PLAN IMPLEMENTATION &amp; COORDINATION</b>		
09057.1	<p><b>Elwha Watershed Adaptive Management Plan &amp; Monitoring</b></p> <p><b>Project Description:</b> Removal of two hydroelectric dams on the Elwha River is scheduled to begin in the fall of 2011 as authorized by the Elwha River Ecosystem and Fisheries Act (PL102-495). Full removal will be completed by 2014 and for the first time in over a century, anadromous fish will have access to the upper watershed. Restoration of fish populations is guided by the Elwha Fish Restoration Plan (Ward et al. 2008) which documents strategies for population rebuilding by stock, hatchery utilization, habitat restoration and monitoring. Monitoring the population response of Elwha River fish populations is fundamental to understanding the effects of the overall project. Monitoring strategies for salmon response and recovery on the Elwha rely on a suite of testable hypotheses using the concept of Viable Salmon Populations (VSP). VSP includes parameters that describe individual stock health including: Abundance, population growth rate (productivity), population spatial structure and diversity (NOAA 2000). Unfortunately there are almost no project monies available to answer these critical long term question. Project partners have secured enough internal resources to answer some of the short term (pre dam removal) questions concerning salmon abundance, productivity, and life history strategies including estimation of adult abundance and productivity for some species. However, these efforts will need to be expanded over space and time in order to be effective. This proposal would support a portion of that effort beginning in 2014-2017 to spatially expand adult salmon surveys using a combination of survey techniques (weir, foot, aerial) combined with marking strategies to assess effectiveness. Additionally we propose to add three upstream smolt trapping sites to measure production from the upper watershed and two major tributaries.</p>	LEKT

	<p><b><u>Limiting Factors Addressed:</u></b>          Dam removal on the Elwha will restore access to over 30 miles of mainstem and 70 miles of tributaries. Dam removal also restores physical processes and will result in improved spawning habitat for returning adults and rearing habitat for juvenile salmonids throughout the watershed. This non-capitol project proposes to measure that response over space and time for two purposes: 1) to provide information on salmon response to project managers so that adjustments to restoration strategies can be made using real data (adaptive management), and 2) to document ecosystem response of the largest controlled dam removal conducted to date in the United States.</p> <p><b><u>Benefits to Salmon:</u></b>          This project will restore habitat and benefit Chinook as well as coho, steelhead, chum, pinks, bulltrout, resident rainbow trout and cutthroat trout. Improvement of upland habitat conditions will contribute to recovering health of main-stem and estuarine areas and the nearshore migration corridor. Historic aerial photographs clearly depict the loss of habitat diversity in the lower river and particularly its estuary. Over time the lower river has lost large deposits of sediment (fewer islands and bars), has much lower diversity of channels, and less diversity of vegetation (age and species). These changes are attributed to the cumulative effects of dam construction and channelization.</p> <p><b><u>Recovery Plan Objectives:</u></b>          Elwha chinook are federally listed and part of the Puget Sound ESU. Dam removal is keystone for recovery of the ESU and arguable the single largest action planned in the near future. Elwha steelhead are also federally listed and part of the Puget Sound steelhead ESU, however a recovery plan has not been prepared to date for this species. However, implementation of the dam removal effort will likely be a cornerstone of several ESU recovery plans. Puget Sound bull trout are also a federally listed fish stocks in Washington State and the Elwha River is a core population area. Puget Sound coho, while not currently listed are a species of concern, and the Elwha population is currently supported almost entirely by hatchery production. Chum and pink populations in the Elwha are considered chronically depressed and have escapements less than 1000 and 200 adults per year, respectively.</p> <p><b><u>Restoration or Protection of Ecosystem Function:</u></b>          This project restores ecosystem function by restoring access to fish habitats blocked for over a century. It also results in improved floodplain habitats as ecosystem processes such as sediment and wood transport are reestablished. Revegetation of reservoirs results in improved riparian zones while restored sediment flux re-connects floodplains in the lower reaches of the Elwha River including its estuary. This project restores ecosystem function by accelerating the recovery of floodplain habitats that have been altered by dam construction and channelization. Ecosystem function is also permanently guaranteed within this area because the floodplains of the watershed are largely protected under the management of Olympic National Park, Project lands and LEKT Reservation are protected from future development of any kind.</p> <p><b><u>Spatial/Temporal Influence:</u></b>          This proposal represents spatial and temporal monitoring efforts for salmon abundance and productivity that to date have focused almost exclusively on the lower river below Elwha Dam (RM 4.9). Monitoring would expand into upstream reaches below river mile 19.5 and focus on adult escapement, distribution and timing. Smolt outmigration would be measured at new sites below Glines Canyon Dam and from to large middle River tributaries (Indian Creek and Little River). An existing lower river site will continue to be monitored by LEKT.</p> <p><b><u>Project Readiness:</u></b>          This project is being sequenced with ongoing monitoring projects to provide expansion of monitoring efforts beginning in 2014, the year salmon will first have restored access to the upper river.</p>	
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	<p><b>Cost:</b> \$300-400,000 for three years beginning in 2014.</p> <p><b>Watershed Priority:</b> Elwha River has a normalized score of 5.00, and is ranked 1<sup>st</sup> as priority watershed.</p> <p><b>Miscellaneous:</b> The Elwha River has the largest productive potential of any river in the NOPL planning area and its productivity is intricately linked to the reestablishment of its forested floodplain. The most productive areas are located in unconstrained river valleys that have anastomosing or braided island morphology. In these areas forest features can attain sizes sufficient to form stable hard points within the floodplain. The interaction of river flows with these surfaces creates boundary conditions which promote a multi-thread channel. Multi thread channels may include surface-water, ground-water or combinations of the two that support diverse life histories of salmon.</p>	
09066.1	<p><b>12 River Channel Migration Zone Assessment and Delineation</b></p> <p><b>Project Description:</b> The Channel Migration Zone assessment and delineation will outline the zone of historical channel migration and potential future channel migration over a timeframe of 100 years. The CMZ delineations will be used for land-use planning decisions; to inform Clallam County's Shoreline Master Plan and relevant updates to the Critical Areas Ordinance; and for restoration project planning. In all watersheds, the CMZ's are found in lower reaches, <i>which also are the most productive salmonid habitat and the first to develop. Floodplain modifications invariably follow floodplain development. Without CMZ delineations, the County cannot effectively protect this productive riverine habitat.</i> CMZ mapping and delineation would occur for McDonald Creek, Siebert Creek, Morse Creek, Elwha River, Salt Creek, Lyre River, East and West Twin Rivers, Deep Creek, Pysht River, Clallam River, and Sekiu River.</p> <p>This information will provide technical information to local officials and stakeholders to better inform their management decisions related to channel migration hazards along rivers. The project will also be important as an educational tool to increase public and landowner awareness of probable channel movements and erosion in the next five to ten decades.</p> <p>Methodology would follow Department of Ecology guidelines where aerial photos can identify channel patterns, and follow DNR Forest and Fish guidelines where mapping must occur on the ground. This project would provide the funding to conduct a CMZ delineation for each of these drainages and work with Clallam County Department of Community Development to incorporate those maps into the Critical Areas Ordinance.</p> <p><b>Why the Project is Needed (limiting factors to be addressed):</b> An assessment of the channel migration zones will provide data that is critical to restoration planning. Clallam County has jurisdiction and authority to limit development within channel migration zones (CMZs) through Clallam County's Critical Areas Ordinance and is currently updating its Shoreline Master Program. Updated CMA information would be used to provide guidance and regulations that more closely fit the river systems.</p> <p>Limiting factors addressed include:  <u>Floodplain Modifications</u>  <u>Stormwater Runoff</u>  <u>Magnitude and Frequency of Peak Flows</u>  <u>Channel conditions</u>  <u>Riparian condition</u></p> <p>The limiting factors listed above either affect, or are affected by, river channels and their migration patterns. Understanding and accurate mapping of the river channels aids in assuring that river processes continue to provide their full range of ecosystem benefits.</p>	CC/ NOPL/ JSKT/ LEKT/ Makah Tribe

	<p><b><u>Benefit to Salmon (how does it address stock status &amp; trends?) Which ESA-listed stock and/or non-listed stock does this project address?</u></b>          ESA-listed stocks A functional floodplain is a key element to salmon habitat recovery. In all watersheds, the CMZ's are found in lower reaches, which also are the most productive salmonid habitat and the first to develop. Without CMZ delineations, the County cannot effectively protect this productive riverine habitat. Floodplain modifications invariably follow floodplain development.</p> <p><b><u>Which Salmon Recovery Plan Objectives does this Project Meet &amp; How?</u></b>          The NOPL 2011 Draft Strategy Appendix A, p. 35, Elements of the Action Agenda states that:          • The amount, quality and location of marine, nearshore, freshwater and upland habitats sustain the diverse species and food webs of Puget Sound lands and waters.          • The amount, quality and location of marine, nearshore, freshwater and upland habitats are formed and maintained by natural processes and human stewardship so that ecosystem functions are sustained.</p> <p>The CMZ study will provide information to help avoid future constriction of the river channels and will provide information for restoration in areas that are now constricted.</p> <p><b><u>How Project supports Restoration or Protection of Ecosystem Functions? (Does it protect high quality fish habitat or restore formerly productive habitat? Does it support restoration and maintenance of ecosystem functions?)</u></b>          The channel migration zone study provides information to help protect and maintain ecosystem functions. The study will provide information for land use decisions and for setting restoration priorities. Study results will be used as a protection tool and as a restoration tool.</p> <p><b><u>Address the project's spatial-temporal scale of influence:</u></b>          Spatially the CMZ assessment and delineation project ranges from the Sekiu River at the west end of the Strait of Juan de Fuca to the Dungeness River in the central-eastern Strait of Juan de Fuca. The information can be used for years once the report is complete.</p> <p><b><u>Timing Needs &amp; Sequencing Requirements (project readiness):</u></b>          Project is ready to go. Channel migration zone delineation studies are underway in on the Hoko; Department of Ecology is conducting a Shoreline Master Program level CMZ study.</p> <p><b><u>Range of Estimated Cost:</u></b>          The project is estimated to cost \$250,000 – 450,000, based on the cost of the current Hoko channel migration zone study undertaken by the Bureau of Reclamation.</p> <p><b><u>Watershed priority &amp; watershed area or which WRIA Nearshore project is located in:</u></b>          The project is located in WRIAs 18 and 19, and includes priority watersheds such as the Dungeness.</p> <p><b><u>Other Key Information, especially any relationship to previous or current projects:</u></b>          NOPL has contracted with the Bureau of Reclamation to conduct a channel migration zone study on the Hoko River, a priority river for identifying channel migration zones. Washington Department of Ecology, with EPA funding, is conducting a study to identify channel migration zones within Clallam County. Results of the Ecology study are expected to inform updates to Clallam County's Shoreline Master Program, but do not provide the detailed information required for restoration planning.</p>	
<b>OUTREACH &amp; EDUCATION</b>		
09051	<b>Clallam County Salmonid Outreach Planner</b>	CC & CCD

	<p><b>Project Description:</b> Building on existing local efforts, develop a comprehensive collaborative program for outreach, education, public involvement, and stewardship promotion At this time outreach efforts are funded by project monies only and are focused on an individual project. A coordinated and consistent effort to communicate with citizens about salmonid ecology and recovery will go a long way to increase public awareness of salmonid recovery efforts and the role that each individual can play. Partners include Clallam County, cities, tribes, state agencies, Clallam Conservation District, North Olympic Salmon Coalition, Clallam Marine Resources Committee, WSU Beachwatchers, and school districts.</p>	
09058	<p><b>Elwha Morse Management Team</b></p> <p><b>Project Description:</b> Support and develop capacity.</p>	CC
09061	<p><b>WRIA-19 Watershed Council</b></p> <p><b>Project Description:</b> Support and develop capacity.</p>	CC
09062	<p><b>Dungeness River Management Team</b></p> <p><b>Project Description:</b> Support and develop capacity.</p>	CC
09068	<p><b>NOPLE-Area Wide Outreach Program</b></p> <p><b>Project Description:</b> These varied efforts will inform and educate about the need for salmon recovery, local projects underway and a call to action about the local changes required to assist salmon and lessen degradation of salmon habitat. This specifically addresses Non-Capitol project objectives iii, iv, v, vi, vii and viii.</p>	NOPLE & WDFW
<b>STOCK MONITORING SUPPORT</b>		
09056	<p><b>Elwha River Nearshore Biodiversity Investigations</b></p> <p><b>Likely Sponsors:</b> NOAA Fisheries, USGS, Lower Elwha Klallam Tribe, Battelle PNW Labs</p> <p><b>Funding Request:</b> \$450,000</p> <p><b>Partnerships:</b> This project is an on-going partnership between NOAA Fisheries, USGS the Lower Elwha Klallam Tribe and Battelle Pacific Northwest Laboratory.</p> <p><b>Brief Description of Project:</b> Assess the current status of salmon, associated forage fish populations, and invertebrate communities in the nearshore environment adjacent to the Elwha River and compare fish use in non-impacted regions of the Strait of Juan de Fuca.</p> <p>The nearshore environment adjacent to the mouth of the Elwha River is severely degraded and has been impacted over time by restricted flow of sediment from the upper Elwha River</p>	NOAA, USGS & LEKT

	<p>watershed. Assessing the status of juvenile salmon and associated forage fish populations, determining their use of this habitat, quantifying the nearshore habitat types and analyzing food web will provide critical baseline information necessary to fully document and understand both the impacts of dams on the Elwha River and the effects that this removal has on the populations of concern.</p> <p>This assessment effort will consist of <i>7 primary assessment methods</i> and will provide a quantitative profile of habitat parameters, fish use in the inter-tidal, sub-tidal, and offshore deepwater areas and provide an analysis of the food web of juvenile salmonids encountered in the survey using stable isotopes methodologies.</p> <p>The project will include beach seining of juvenile salmon and forage fish, inter-tidal habitat surveys, SCUBA-based sub-tidal characterizations of habitat and fish use, profiling of kelp forests use by juvenile salmon and associated forage fish with lampara net sampling coupled with snorkel surveys, and deep water tow netting to sample fish use in deep-water transit corridors adjacent to the mouth of the Elwha River and the mouth of the Strait of Juan de Fuca.</p> <p><b><u>Limiting Factors Addressed:</u></b> The need to conduct biodiversity investigations of the Elwha Nearshore was identified as a priority activity in the proceedings of the Technical Workshop on Nearshore Restoration in the Central Strait of Juan de Fuca (Triangle Associates, INC. 2004. Technical Workshop on Nearshore Restoration in the Central Strait of Juan de Fuca. 59pp).</p> <p><b><u>Stock Status and Trends:</u></b> The project addresses stock status and trends by assessing the status of stocks in the nearshore and assessing their temporal and special usage of the nearshore.</p> <p><b><u>Listed Stocks:</u></b> Hood Canal/Strait of Juan de Fuca summer chum and Puget Sound steelhead, Puget Sound Chinook and bull trout.</p> <p><b><u>Other Stocks:</u></b> Non-listed stocks originating in nearby watersheds include coho and sea-run cutthroat, pink salmon. In addition, the nearshore is utilized by a number of forage fish populations.</p> <p><b><u>Benefit to Salmon:</u></b> <i>Implementation of Key Action Area Work Plan</i> Assessing the status of juvenile salmon and associated forage fish populations, determining their use of this habitat, quantifying the nearshore habitat types and analyzing food web will provide critical baseline information necessary to fully document and understand both the impacts of dams on the Elwha River and the effects that this removal has on the populations of concern. This project will benefit the Strait through implementation of a <i>Key Action Area Work Plan</i> – The assessment of juvenile fish use in all WRIsAs in the region is noted as being an on-going project necessary to furthering the understanding of the use of the nearshore environment by juvenile fish.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objective Does This Project Meet and How?</u></b> This project will fill an important data gap identified in the Technical Workshop on Nearshore Restoration in the Central Strait of Juan de Fuca (Triangle Associates, INC. 2004. Technical Workshop on Nearshore Restoration in the Central Strait of Juan de Fuca. 59pp).</p> <p><b><u>Project Support of Restoration or Protection of Ecosystem Functions:</u></b> The Elwha River Nearshore Biodiversity Investigations will add to the on-going assessment and of juvenile fish use within the greater Puget Sound region and contribute to the understanding of fish use following entrance into the Strait of Juan de Fuca.</p> <p><b><u>Certainty of Project Success:</u></b></p>	
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	<p>The partners in this project have been actively involved with similar assessments of populations of salmon and associated forage fish populations in the greater Puget Sound region for a number of years. The project lead, Kurt Fresh is currently a member of the Puget Sound Nearshore Partnership and has helped to design and implement Guidance Strategies for the Protection and Restoration of the Nearshore Ecosystems of Puget Sound. This project will build upon and expand these past efforts and successes.</p> <p><b><u>Proposed Starting and Ending Dates:</u></b> 2012 to 2018</p> <p><b><u>Cost Appropriateness:</u></b> Cost estimates are based upon expenses incurred in the past conducting similar assessments.</p>	
09076	<p><b>Elwha River Salmon Enumeration Weir</b></p> <p><b><u>Likely Sponsors:</u></b> National Park Service, US Geologic Survey, NOAA Fisheries, US Fish and Wildlife Service, Lower Elwha Klallam Tribe</p> <p><b><u>Funding Request:</u></b> \$610,000</p> <p><b><u>Partnerships:</u></b> This project will consist of a partnership between 4 federal agencies and the Lower Elwha Klallam Tribe.</p> <p><b><u>Brief Description of Project:</u></b> Construct, install and maintain a floating weir in the Elwha River to allow the accurate enumeration of returning adult salmon to the watershed.</p> <p>The current depressed state of the native Elwha River populations are at risk of extinction with the impending removal of the hydroelectric projects on the Elwha River and release of sediment into the system (expected duration of impact 5-7 years). However, following dam removal the potential for stock recovery is high. A fish enumeration weir on the river will allow managers to accurately assess recovery rates, will provide an efficient means for broodstock collection and will allow for tagging and collection of other important biological information needed to assess the success of ecosystem recovery on the Elwha River.</p> <p><b><u>Limiting Factors Addressed:</u></b> There is currently no enumeration of adult salmon returning to the Elwha River. The weir will permit enumeration to occur and will help managers assess the effectiveness of restoration and recovery actions being conducted in conjunction with dam removal on the Elwha River.</p> <p><b><u>Stock Status and Trends:</u></b> Stocks of Chinook, steelhead, and bull trout are currently endangered. Chum and pink salmon are at critically low levels.</p> <p><b><u>Listed Stocks:</u></b> Puget Sound Chinook, Puget Sound steelhead, bull trout.</p> <p><b><u>Other Stocks:</u></b> Non-listed stocked include coho and sea-run cutthroat, pink salmon and chum salmon.</p> <p><b><u>Benefit to Salmon: Implementation of Key Action Area Work Plans</u></b> A weir allows managers to accurately assess recovery rates and provides an efficient means for brood stock collection, tagging and collection of other important biological information pertinent to ecosystem recovery on the Elwha River. This information will provide managers</p>	NPS, USGS, USFWS, NOAA, WDFW & LEKT

	<p>with tools necessary to accurately evaluate and the effect of the Elwha River Fish Restoration Plan (NOAA Technical Memorandum NMFS-NWFSC-90) and manage the restoration actions adaptively.</p> <p><b><u>Which Salmon Recovery Plan/Watershed Analysis or Plan Objective Does This Project Meet and How?</u></b> Implementation of Key Action Area Work Plans. This project will help to fulfill the monitoring needs identified in the Elwha River Fish Restoration Plan (NOAA Technical Memorandum NMFS-NWFSC-90).</p> <p><b><u>Project Support of Restoration or Protection of Ecosystem Functions:</u></b></p> <ol style="list-style-type: none"> <li><b>A key tool for decision making:</b> One of the key concepts identified in the Elwha River Fish Restoration Plan is the assessment of strategies employed to restore fish populations. The fish enumeration weir will provide accurate information on the number of salmon returning to the Elwha River. This information will assist managers in answering the most anticipated question of “How many fish are returning to the Elwha River?” Without the weir, this question may never be accurately answered.</li> <li><b>Implementing the recommendations of the Hatchery Scientific Review Group (HSRG):</b> The fish enumeration weir will also assist managers in meeting escapement limits of Hatchery Origin Returns (HORs) in the watershed and therefore limiting the potential for negative genetic and ecological interactions between HORs and Natural Origin Returns (NORs). The HSRG has identified a limit of 20% HORs in the watershed as being critical to meeting interaction guidelines between hatchery and natural-origin fish. The weir will allow managers to assess observed ratios and permit HSRG recommendations to be attained.</li> </ol> <p><b><u>Certainty of Project Success:</u></b> The partners in this project have been actively consulting with other regional managers involved with the design, construction and operation of floating weirs used to enumerate salmon.</p> <p><b><u>Proposed Starting and Ending Dates:</u></b> 2012 to 2014</p> <p><b><u>Cost Appropriateness:</u></b> Cost estimates are based upon expenses incurred in similar weir construction and operation programs.</p>	
<b>HABITAT PROJECT MONITORING</b>		
09065	<p><b>Jimmycomelately Creek &amp; Dungeness River Habitat</b></p> <p><b><u>Project Description:</u></b> Implementing conservation goals laid out in watershed recovery plans has resulted in about 300 acres of land conserved in acquisitions and easements by WDFW, Clallam County, Jamestown S'Klallam Tribe, and NOLT. There is a strong need for stewardship funding to assure that the conservation goals are met and the habitat remains in good condition. Stewardship will focus protecting the sites from improper use, noxious weed control, general site maintenance, and monitoring of land use. WDFW is very close to placing a moratorium on future land acquisition because they lack funds and personnel to maintain the portion of their land base purchased for salmon recovery. Habitat protection through acquisition and easement is a cornerstone for salmonid recovery. This is a critical issue that needs funding.</p>	WDFW, JSKT, NOLT & CC
09074	<p><b>NOPLE Area Adaptive Management Plan &amp; Monitoring</b></p> <p><b><u>Project Description:</u></b></p>	NOPLE, CC, COPA, & COS

	<p>This will allow the lead entity to participate in the group process needed to create an adaptive management plan which incorporates areas needed for recovery which have not been primary focuses previously and better integrates efforts. This meets Non-Capital program objectives I, ii, iii, iv, vi, vii, and ix.</p>	
<p>09075</p>	<p><b>NOPLE Area wide Monitoring Program</b></p> <p><b><u>Project Description:</u></b>                  This program will establish watershed- based programs to monitor for Viable Salmonid Populations parameters and will provide for intra-NOPLE coordination to compile and report data/findings for EDT/AHA. The following present details on the Dungeness. As the program develops, appropriate programs would be developed for other watersheds.</p> <p><b><u>Dungeness Chinook Population Analysis and Modeling to Support Harvest, Hatchery and Habitat Management and Planning</u></b>                  This program would address the population analysis and modeling needs identified in the Dungeness Chinook recovery plan. Accomplishing the tasks under this program would help fill gaps identified by the TRT (see below) and would increase understanding and certainty in the management of Dungeness Chinook recovery. The program would support hiring an analyst proficient in population modeling and assessment to accomplish the following tasks:</p> <ul style="list-style-type: none"> <li>• Chinook cohort analysis and run reconstruction of Dungeness Chinook Hatchery stock. Though data is currently limited, the layout and initiation of the analysis and could and should begin.</li> <li>• Use run reconstruction results to estimate Chinook exploitation rates over time and provide historical modeling input for preseason fisheries planning.</li> <li>• Estimate a rebuilding exploitation rate (RER) as defined in the Co-managers Chinook Harvest Management Plan; this would be the exploitation rate that controls protective measures incorporated in annual fisheries planning and management.</li> <li>• Update the Dungeness Chinook EDT analysis and use it to reinforce and expand assessments of impacts on VSP parameters and effectiveness of recovery measures.</li> <li>• Help prepare for 2009 PST negotiations of a new Chinook annex to offer improved protection from non-southern U.S. harvest impacts.</li> </ul> <p>This is a high priority program because it addresses immediate needs for population analysis and modeling to help reduce uncertainties and close gaps in the Dungeness recovery plan, including those identified by the Puget Sound Technical Recovery Team (TRT)*. The immediate need for improving the recovery plan and its ongoing and pending recovery measures is necessary for effective adaptive management. Accordingly this program should be put in place as soon as possible and operate at least over the next three years.</p> <p><b><u>Dungeness Chinook Biological Monitoring Project</u></b>                  A biological monitoring project is proposed to augment the current biological monitoring of spawning escapements (that includes determining natural and hatchery origin of Chinook spawners), and juvenile out-migrant trapping on Matriotti Creek. This project is intended to collect life history and distribution information on Chinook in the watershed and Dungeness estuary, and also on other salmonids that may interact with the Chinook. Data collected over the long-term would provide for monitoring biological changes or trends in relation to recovery actions and to test assumptions made in recovery planning.</p> <ul style="list-style-type: none"> <li>• Operate a screw trap on the Dungeness mainstem to determine juvenile abundance of Chinook, coho and steelhead, and timing of their migratory movements (Apr. – Sep.).</li> <li>• Survey the Dungeness nearshore with beach seines and traps at a variety of tidal regimes to collect information on the distributions and life histories of all species (Apr. Sep.).</li> <li>• Fence trap Canyon Creek (fish passage is being restored) and Bear Creek to determine juvenile distribution, abundance and migration patterns of all salmonid species (Apr. – Sep.).</li> <li>• Help with Chinook and pink (in odd numbered years) salmon spawner surveys in late summer/early fall (Aug.-Oct.). Conduct coho salmon spawner surveys in late fall/early winter (Oct. – Dec.). Determine proportion of hatchery and wild origin coho salmon on spawning grounds.</li> </ul>	<p>NOPLE, CC, COPA &amp; COS</p>

	<ul style="list-style-type: none"><li>• Conduct steelhead spawner surveys in April and May, as time permits (priority is with juvenile sampling of other species), to determine stock status.</li><li>• As time permits, snorkel survey index areas throughout the system to determine relative species abundance and rearing habitats.</li></ul> <p>The project was identified in the Dungeness recovery plan as a critical part of the hatchery and harvest components. The TRT stated that the most important way to improve certainty of an effective hatchery strategy was to improve adaptive management.*</p>	
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**Puget Sound Partnership  
and Recovery Implementation Technical Team (RITT)**

**2013 Three Year Work Plan Review**  
for the  
**North Olympic Peninsula Lead Entity**

**Puget Sound Partnership and Recovery Implementation  
Technical Team  
2013 Three Year Work Plan Review  
North Olympic Peninsula Lead Entity**

**Overview**

The 2013 Three-Year Work Plan Update is the eighth year of implementation since the Recovery Plan was submitted to NOAA/NMFS in 2005. The Puget Sound Partnership, as the regional organization for salmon recovery, along with the Recovery Implementation Technical Team (RITT), as the regional technical team for salmon recovery, perform an assessment of the development and review of these work Plans in order to be as effective as possible in the coming years. These work plans are intended to provide a road map for implementation of the salmon recovery plans and to help establish a recovery trajectory for three years of implementation. *Given that watershed chapter areas are focusing efforts on development of monitoring and adaptive management (M&AM) plans over the next two years, the 3YWP process has been significantly scaled down for 2013. It is anticipated that the M&AM work will eventually replace much, if not all, of this process.*

The feedback below is intended to assist the watershed recovery plan implementation team as it continues to address actions and implementation of their salmon recovery plan. The feedback is also used by the Recovery Council, the Puget Sound Partnership and the RITT to inform the continued development and implementation of the regional work plan. This includes advancing issues such as adaptive management, all H integration, and capacity within the watershed teams. The feedback will also stimulate further discussion of recovery objectives to determine what the best investments are for salmon recovery over the next three years.

**Guidance for the 2013 work plan update reviews**

**Watersheds were asked to respond to the following questions:**

*I. Context:*

1. Provide a brief overview of the characteristics of your Chinook Salmon Recovery area. Describe the process for developing your 3YWP narrative and project/activity list. Who are the stakeholders involved and what are their roles? Are harvest and hatchery managers involved in your planning group or have they had an opportunity to comment or consult on your 3YWP?

*II. Background/Planning/Logic of the Recovery Chapter:*

1. What are the recovery goals for your watershed for Chinook salmon? Include information on both population goals (VSP parameters) and habitat goals.
2. What is the current strategy to accomplish the recovery goals and what assumption(s) is this strategy based on?
3. What new knowledge or information has changed your strategy, assumptions or hypotheses since your recovery chapter was written?
4. How is the sequencing and timing of actions or projects done in such a way as to implement the strategy as effectively as possible?

*III. Plan and Gaps:*

1. What are the obstacles or barriers for implementing monitoring and adaptive management? Where could you use support for development of your M&AM plans?

2. Considering all actions affecting salmon recovery in the watershed, is the Chinook salmon resource likely to be closer to, or further from, the recovery goals ten years from now as it is today?

**Factors to be considered by the RITT in performing its technical review of the workplan update included:**

*I. Consistency:*

1. Is the plan's current strategy either substantially the same as documented in the Recovery Plan (Volume I and II of the Puget Sound Chinook Recovery Plan plus NOAA supplement) or well supported by additional data and analysis?
2. Is the sequence of actions identified in the 3YWP consistent with the current hypotheses and strategies?

*II. Sequence/Timing:*

1. Are actions sequenced and timed appropriately for the current stage of implementation?

**Review Process**

The following review consists of the following components:

1. a regional technical review that identifies and discusses technical topics of regional concern
2. a watershed-specific technical review focusing on the specific above-mentioned technical questions and the work being done in the watershed as reflected by the three year work plan
3. a watershed-specific recovery plan consistency review of projects submitted to the SRFB for funding

The RITT reviewed each of the salmon recovery three-year work plan updates in May-July 2012. The RITT evaluated each individual watershed according to the four questions provided above. In the review, the RITT identified a common set of regional review comments for technical feedback that are applicable to all watersheds, as well as watershed specific feedback using the four questions. The regional technical review and watershed specific technical review comments are included below.

**Regional Technical Review: Common Themes**

***We Are Not On Pace to Meet Recovery Goals***

Our review of the progress, challenges, and opportunities for salmon recovery compiled in the three-year work plans and supporting documents indicates that progress towards Chinook salmon recovery across the region has been uneven and, on the whole, implementation of salmon recovery plans is failing to meet the pace identified in the 10 yr work plans. This slower pace, which has been a common theme since we began reviewing progress, is having a compounding impact that ultimately lessens our ability to recover Chinook salmon in the ESU. The work plans and project proposals document that the cost of implementing projects and protecting habitat continues to grow, yet the resources to do the work have not kept pace. At the same time, Chinook salmon populations in the ESU are declining. The gap between current status, recovery goals, and what it will take to get to recovery goals is growing even larger. In the last decade, nine of the 22 Chinook salmon populations continued to decline and these declines included populations in four of the five regions of Puget Sound (PSP 2012). Based on our review, the region needs to make progress on the issues below to reverse this trend.

***Identify and Learn From What Is Working and What Is Not***

The partners in the Puget Sound Salmon Recovery Plan lack a coordinated system for tracking progress, detailing accountability, and making decisions to improve salmon recovery strategies and actions based on information of the effectiveness of what has been implemented. The National Marine Fisheries Service (NMFS) in adopting the Puget Sound Chinook Salmon Recovery Plan identified the lack of monitoring and adaptive management plans as a critical piece that needed to be added (NMFS 2006). The monitoring and adaptive management that is occurring exists as a patchwork of different programs at local and regional scales based on the regulatory needs of different authorities, local priorities, the availability of different sources of funding and technical expertise, and often uses different scientific approaches. At the local scale, this work focuses primarily on site-specific monitoring of habitat restoration projects and salmon. In some watersheds, it also includes monitoring and adaptive management frameworks.

To address this issue the RITT has developed a framework to support the development of systematic, coordinated monitoring and decision making. The framework provides a single classification of different salmon habitats synthesized from many scientific publications to promote sharing of information among different projects; it identifies and defines suites of pressures and stressors acting on salmon and salmon ecosystems; it promotes a transparent approach that illustrates how different recovery strategies are expected to reduce pressures; it describes logical sequences of actions and outcomes; it identifies measurable objectives for the outcomes, the sources of uncertainty associated with them, and indicators to judge progress towards meeting salmon recovery goals. The use of this consistent approach across watersheds will provide more powerful information to decision makers while still retaining the individual characteristics and priorities of the individual watershed recovery plans. For example, this approach provides a means to test similar assumptions across multiple watersheds and connect local and regional scale monitoring information to track progress across the region.

With the support of the Puget Sound Partnership, fourteen individual watershed recovery groups are applying the framework by translating sixteen recovery plans into that format and using it to assess monitoring needs and priorities. They plan on completing an initial assessment using the Framework by mid-2014. The purpose is to help salmon recovery planners in different watersheds consistently describe assumptions stated in their watershed recovery plans and to incorporate new information to evaluate these assumptions. For watersheds that have not yet developed monitoring and adaptive management plans, these assessments are expected to form the technical basis from which watersheds will be able to develop or refine individual monitoring and adaptive management plans. All watersheds are considering three basic questions to set monitoring priorities:

- 1) Will the information gathered from monitoring efforts affect future decisions regarding land, water, and resource management and Chinook salmon recovery?
- 2) Where and to what degree is there uncertainty, and how will this uncertainty affect decision making by resource managers? and
- 3) How will the uncertainty be reduced or resolved over time through successful implementation of the Monitoring and Adaptive Management Plan?

Making this system work will not be possible without strong policy-level leadership, support, and participation. This approach will support broader participation by all parties necessary for salmon recovery, which was lacking in the development of the existing Plan. We anticipate that further engagement of policy makers will be needed to identify the short-term and long-term measurable objectives for habitat restoration and protection, hatchery management, and harvest, as well as better

integration of the different management sectors (—HI-Integration) within and across watersheds. This broad, active participation will be necessary for success.

Finally, no policy body or agency appears to have assumed responsibility for transparently documenting and integrating changes to salmon recovery plans. Changes in some strategies, such as for harvest and hatcheries, are documented in ESA consultations with the National Marine Fisheries Service, but changes in most habitat strategies in the Watersheds Recovery Plans are not. We anticipate that the updating of Watershed Plans using the framework will meet this need. It will also provide a mechanism and process to include information that is currently being collected by diverse groups. In this way, all relevant monitoring information should become part of the knowledge base of all participants in watershed recovery plan implementation and the subsequent adaptive management of implementation.

### ***Protection of Ecosystem Functions and Habitat***

Protection of existing marine and freshwater habitats is essential for salmon recovery in Puget Sound. Protection, as used here, means the conservation of habitat and the functions it provides through passive actions (e.g. habitat acquisition) and the application of land use regulatory measures. Adequate protection of salmon habitat in Puget Sound continues to be an issue in all watersheds. Our reviews noted that the continued degradation of habitat is a concern throughout the region. Some watersheds continue to lose forest cover and riparian functions within the Urban Growth Boundary (Pierce 2011, Vanderhoof *et al.* 2011).

Habitat improvements or acquisition are easier to implement by individual watershed groups, given funding, but meaningful protection of existing habitat quality relies on local regulations and their enforcement. One of the premises of the Puget Sound Chinook Recovery Plan approved by NOAA in 2005 was that habitats throughout Puget Sound would improve with the implementation of watershed strategies in the Plan and not continue to degrade. The plan identified a variety of regulatory tools that afforded protection. These included the Shoreline Management Act (SMA), Growth Management Act (GMA), Critical Area Ordinances (CAO), state Hydraulic Permit Approvals (HPA), NMFS's reviews of federal actions under Section 7 of the ESA, and other federal actions (i.e. the Army Corps of Engineers' levee vegetation management policy and others). Despite this, some watersheds noted that the current rate of habitat loss may be offsetting any gains the salmon recovery groups are making through restoration projects. The effectiveness of these regulatory processes is not documented in any cumulative, comprehensive manner. However, these regulatory actions must be effective in protecting and maintaining the current biological integrity of these areas or the implementation of projects alone will not recover Puget Sound Chinook salmon.

We note with interest that the Salmon Recovery Council did not ask for a policy review of progress in the 2013 three-year work plans. We repeat our recommendation from last year that Salmon Recovery Council (SRC), responsible agencies, watershed groups, and the RITT and other experts need to develop ways to provide technical input for integrating to a much greater extent the actions that promote salmon recovery within these local and regional decisions and regulations affecting salmon habitat. Alone none of these processes are sufficiently integrated with the Puget Sound Salmon Recovery Plan for the RITT or the SRC to provide specific guidance regarding how habitat protection should be implemented to support salmon recovery. Therefore, although some of the RITT's watershed-specific comments suggest ways that individual watershed groups could better integrate habitat protection into their recovery plan implementation, we also recognize that much of the solution to this problem lies in revising the underlying planning processes, which is not a scientific enterprise.

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### ***H Integration***

In their 2003 guidance to the local watersheds, the Puget Sound Technical Recovery Team (TRT) identified the need for an integrated All-H strategy to recover Puget Sound Chinook salmon. This message was emphasized again in the Puget Sound Salmon Recovery Plan (2005) and the NOAA supplement (2006): all of these documents clearly state that actions in Habitat, Hatchery, and Harvest management (the —Hsl) must be coordinated towards recovery of Puget Sound Chinook salmon. H-Integration is defined as a coordinated combination of actions among all H-Sectors - harvest, hatchery, and habitat – that together work to achieve the goal of recovering self-sustaining, harvestable salmon runs.

Although actions are taking place in all three of these —Hs| the three-year work plans do not yet reflect a coordination or integration of the —Hs. The goal of the H-Integration process within a watershed, which the RITT included under adaptive management, should be to develop integrated strategies and suites of actions among all the H-sectors that are consistent with predictions of moving salmon populations towards short, moderate, and long-term recovery goals. The overall objective of H-Integration is to summarize how the H's work together, identify actions within each H, predict the outcomes and identify performance measures in terms of VSP, track progress on the implementation of actions, and report progress on performance measures.

Six steps have been identified with the intent of advancing H-Integration with the watersheds. These six steps were developed to meet the overall goals and objectives identified above and include:

- 1) Identify the people that need to participate and how to involve them.
- 2) Gain a common understanding of how the system works—habitat conditions and fish populations this includes: habitat conditions and priority limiting factors, harvest rates, hatchery management, fish population status (e.g. VSP parameters), and community needs.
- 3) Agree upon common goals and a set of outcomes across the H-sectors that describe what will be achieved related to those goals in measurable terms.
- 4) Examine, evaluate and select a suite of complementary actions across the H-s to achieve the outcomes and determine what evaluation tools to use.
- 5) Document rationale, implementation steps (specific complementary actions in hatcheries, harvest, and habitat), expected outcomes (including effects on VSP), and benchmarks.
- 6) Build and implement a Verification, Effectiveness and Accountability system. Implement actions, monitor results, prepare annual performance reports, and adjust over time.

A couple of watersheds have expressed some frustration that all the necessary participants are not consistently participating to integrate the Hs effectively or that neither side has the capability to make changes to the others processes that drive the management of all the individual —Hs|. Under this situation it is not possible to evaluate the three-year work plans or the progress towards recovery adequately unless the watersheds include significant details of the actions in all of the H's as well as how they could be integrated. Part of H-integration is assuring that all parties have a common understanding of the status of the salmon resource (All –Hs) as well as what actions are needed to move that resource to a recovered status. The understanding of the status and trends of Chinook salmon depends on information on the populations' viability characteristics, such as time series of spawning escapement, juvenile outmigrant numbers, and recruits per spawner. Some three-year work plans include this information; most do not. We recommend that watershed planning groups include this information in all watershed three-year work plans. One benefit is that the process of gathering basic status-and-trend information often results in improving communication between watershed recovery planners, fishery resource managers, and other management sectors. Likewise, it is just as important to have clearly defined habitat goals that are understood by fishery resource managers and others.

The RITT continues to urge the Salmon Recovery Council, whose members include the key parties in salmon recovery, to provide clear policy direction that all H's must work together through the adaptive management process outlined in the —Framework| for salmon recovery to progress. We believe that both effectiveness and efficiency of management and recovery dollars will be increased if habitat restoration, habitat protection, harvest management, and hatchery management (including hatchery —reform|) are all part of the same salmon recovery plan.

### ***Importance of Nearshore Marine Ecosystems to All PS Chinook Populations***

Salmon recovery plans focus on issues for salmon in freshwater and estuarine habitats. With newer information regarding Chinook salmon use of nearshore habitats we recognize an emerging regional priority of increased emphasis on nearshore protection and restoration. The nearshore is an important migration corridor to and from freshwater and marine ecosystems (Fresh and Beamer 2012; Morley et al. 2012, Toft et al. 2007). These are the habitats that are crucial during the transition from freshwater to marine Chinook salmon life stages. For example, growth during a juvenile's first summer in the nearshore is an important determinant of its overall survival to returning as an adult and an essential element in estimates of population viability parameters such as productivity. What we must recognize is that our knowledge of early marine migrant life histories and requirements in the nearshore environments of Puget Sound is limited, particularly in regards to viability of individual populations, and is only broadly conceptualized in life cycle models of Chinook life history and viability.

Recovery planning for Chinook salmon on an individual watershed basis has focused on efforts to reduce ecosystem pressures and improve ecosystem processes for distinct natal populations in their freshwater and estuarine habitats. However, each salmon watershed is uniquely connected to nearshore marine habitats. Chinook recovery actions are challenged by the differences in approach that are apparent between those —watersheds| with natal and non-natal populations of Puget Sound Chinook salmon. For example, the San Juan and Island watersheds and their landscapes consist almost entirely of nearshore habitats which are utilized by migratory juvenile and adult Chinook salmon originating in other watersheds. Similarly, the South Puget Sound and West Sound watersheds provide extensive habitats for the southernmost independent populations of Puget Sound Chinook salmon, i.e., originating in Nisqually and Puyallup/White rivers. Other non-Puget Sound salmon populations, including

Canadian ones, have also been found throughout the Puget Sound nearshore environments. Designing nearshore strategies for salmon recovery and integrating them with freshwater and estuarine strategies has to address several key challenges:

- 1) Nearshore habitats are likely to be shared by salmon populations which originate from multiple watersheds.
- 2) Nearshore ecosystem processes occur at broader geographic scales than the individual watershed scale that comprises the freshwater ecosystem processes.
- 3) Scientific approaches and tools for nearshore protection and recovery have emphasized broader ecosystem objectives rather than objectives specific to salmon recovery (e.g., protection of forage fish spawning sites, multispecies focus, extent and density of eelgrass beds, nearshore riparian vegetation, shoreline armoring, etc.).

Thus research (e.g., assessments and learning) and monitoring (e.g., status and trends, effectiveness of implemented projects, etc.) of salmonid populations in nearshore marine habitats is likely to exceed the management scale and scope of any individual watershed. The research questions and projects need to be designed over larger (subregional and/or regional) scales. A variety of tools exist which may help integrate marine and watershed (i.e., freshwater) ecosystem planning. Genetic tools now allow researchers to estimate the proportions of individual salmon populations present in specific habitats at different times. Conceptual and qualitative models can link general nearshore ecosystem processes and pressures with their importance for salmonid use. Combined with well-designed monitoring and research programs, information regarding specific Chinook salmon populations may be gained in specific nearshore areas and/or habitats. Thus, increasing our knowledge of Chinook salmon life histories in marine environments is essential. This will require coordination and collaboration between individual watersheds, and ultimately this knowledge will be integrated and complement recovery efforts in freshwater ecosystems to achieve, in particular, a more comprehensive understanding of the diversity and spatial distribution of Puget Sound Chinook salmon populations, as well as, abundance and productivity parameters.

Resources:

Fresh, K., and E. Beamer. 2012. Juvenile salmon and forage fish presence and abundance in shoreline habitats of the San Juan Islands, 2008-2009: Map applications for selected fish species.

([http://www.skagitcoop.org/documents/Beamer\\_Fresh\\_2012\\_Final.pdf](http://www.skagitcoop.org/documents/Beamer_Fresh_2012_Final.pdf))

Morley, S. A., J. D. Toft, and K.M. Hanson. 2012. Ecological effects of shoreline armoring on intertidal habitats of a Puget Sound urban estuary. *Estuaries and Coasts* 35:774-784.

Toft, J.D., J.R. Cordell, C.A. Simenstad, and L.A. Stamatou. 2012. Fish distribution, abundance, and behavior along city shoreline types in Puget Sound. *North American Journal of Fisheries Management* 27: 465-480.

### ***Developing Recovery Projects and Social Capital***

The *Puget Sound Salmon Recovery Plan* (2005) noted that strategic approaches to develop proposals for restoration and protection were needed in some watersheds; however, lack of public support would hinder implementation of those projects. The Plan identified the need to build public support using incentives and education. In the last eight years, most watersheds have developed technical processes for identifying priority projects based on their hypothesized benefits to salmon. Each year, the RITT has reviewed the projects proposed for implementation and noted that in some cases opportunities associated with landowner willingness and/or participation have constrained choices identified by scientific analyses. This sometimes drove actual prioritization, sequencing, and implementation of projects, which clouds the transparency of how projects were chosen, prioritized, and sequenced.

Watershed recovery planners make the best choices they can in their local areas, but the region has made little progress in implementing and testing strategies for building public support.

The RITT suspects that in local areas where recovery planners are balancing the demands to implement the most effective projects with the need to build more public support, the choices of suites of projects may represent the tradeoff between the long-term effectiveness of salmon recovery by building social capital and short term effectiveness of selecting projects that may not be the most effective. Awareness of the importance of social capital strategies in conservation is increasing (e.g. Pretty and Smith 2004, Mandarano 2007). These kinds of decisions at the watershed level, however, are being made on an ad hoc basis without consideration for their wider application or knowledge of what has worked in other places. The benefits are hard to quantify.

The RITT notes that the region has a significant opportunity to address both the overarching strategy to build public support in the Plan and the uncertainty of project selection at the local level by incorporating specific, intentional adaptive strategies to build social capita through the choice and implementation of restoration projects. Monitoring the results across the Puget Sound region could provide significant opportunities to learn and improve salmon recovery actions. The strategy and design of this would likely be different than for monitoring biological strategies. As described by Anderson et al. (2003), this might be an appropriate problem for —evolutionary problem solving‖ rather the more typical active or adaptive management approaches. In evolutionary problem solving, learning occurs when managers share the results of adapting many, independent prototype actions (e.g. explicit decision to build social capital through project implementation). The focus is on innovation (trying different approaches), diffusion (documenting the results and sharing them so others can try them), and adaptation. Monitoring of success is essential, but the strategy might rely less on statistical analysis and monitoring standardized variables and more on narrative sharing of experiences.

**Resources:**

Anderson, J.L., R. W. Hilborn, R.T. Lackey, and D. Ludwig. 2003. Watershed restoration – adaptive decision making in the face of uncertainty. Pages 203-332 in *Strategies for Restoring River Ecosystems: Sources of Variability and Uncertainty in Natural and Managed Systems* (R.C. Wissmar and P.A. Bisson, eds.). American Fisheries Society, Bethesda.

Mandarano, L. A. 2009. Social network analysis of social capital in collaborative planning. *Society & Natural Resources* 22:245-260.

Pretty, J., and D. Smith. 2004. Social capital in biodiversity conservation and management. *Conservation Biology* 18:631-638.

**Watershed Specific Technical Review: NOPLE**

[not provided as full three year workplan not received from Lead Entity]

**PSAR and SRFB Project Consistency Review**

*Review of Expedited PSAR Projects in NOPLE:*

The North Olympic Peninsula Lead Entity (NOPLE) project list for Early Action PSAR funding includes the following projects:

- Dungeness Instream Flow Restoration Project (Clallam Conservation District): #13-1064
- Lyre Estuary and Nelson Creek (North Olympic Land Trust): #13-1094\*\*
- Dungeness Riparian Habitat Protection- Clayton (Jamestown S’Klallam Tribe): #13-1066
- Pysht floodplain acquisitions phase IV (North Olympic Land Trust): #13-1062

Based on the RITT's review of the NOPLE watershed chapters (Dungeness and Elwha Rivers) of the Puget Sound recovery plan and the current three-year implementation plan, the RITT has determined that the Dungeness Instream Flow Restoration Project and the Dungeness Riparian Habitat Protection-Clyton land acquisition will provide direct benefit and will help contribute to restoring important flows and protecting priority salmon habitat in the Dungeness River. In addition the Lyre Estuary and Nelson Creek acquisition project will protect critical nearshore and estuary habitats that will directly benefit Elwha River salmon populations, in addition to those of the Dungeness and other Puget Sound Chinook populations during their outward migrations to the Pacific Ocean.

However, based upon our review the Pysht floodplain acquisition phase IV project does not directly benefit the recovery of Puget Sound Chinook salmon populations, which is the basis of this review. We believe the project has merit and recognize that it was reviewed and scored well within the NOPLE technical review team. This project does contribute to moving the Puget Sound salmon populations towards their recovery goals.

#### *Review of Regular Round Projects in NOPLE:*

The North Olympic Lead Entity (NOPLE) is proposing eight projects for funding, four primary projects and four alternative projects. All of which were on their Three Year Work Plan. To determine the consistency of these projects with the recovery strategy for the Watersheds in the NOPLE area, the Recovery Implementation Technical Team (RITT) reviewed the Dungeness and Elwha Chinook Recovery Plans, the three-year work plans for the watershed, and the project proposal information available in the PRISM database (<http://www.rco.wa.gov>).

Based on this review, the RITT concluded that all four primary and the four alternate projects these projects are consistent with the Dungeness or Elwha Chinook Recovery Plans and the three-year work plans for the respective watershed. The eight projects listed below address key elements of the recovery plan and are included in the three-year work plan:

#### **Primary Projects**

- Elwha River Revegetation
- Dungeness Large Wood
- Dungeness Riparian Restoration
- Ediz Hook Beach Restoration

#### **Alternate Projects**

- 3 Crabs Restoration Construct
- Dungeness Instream Flow
- Dungeness Levee Setback
- 3Crabs Restor-Engr Design

These projects are key/priority projects for their respective watersheds and will advance recovery of Elwha and Dungeness Chinook specifically and Puget Sound ESU as a whole. It is worth noting that the Ediz Hook Beach Restoration project, is a nearshore habitat restoration project occurring on the inside of Ediz hook (within Port Angeles Harbor). While Port Angeles Harbor is not identified within the Puget Sound ESU, it is believed that this project will benefit Puget Sound juvenile salmonids directly by restoring near shore habitat that is used by juvenile salmon and indirectly by creating suitable beach spawning habitat for forage fish that salmon feed upon.

In this watershed, as well as all the others in the Puget Sound, whether these projects will in turn contribute to moving Puget Sound salmon populations towards their recovery goals will also depend upon further funding to implement additional projects and whether other actions across all watershed chapters are being implemented, including appropriate harvest management, hatchery management, and habitat protection actions.

# NOPLE 2013 Ranking Work Plan Narratives

Date:

14-Jan-13

**Original Workbook constructed by:**

WH Pearson 17-Jan-11  
Peapod Research  
for  
North Olympic Peninsula Lead Entity for Salmon

**Data Entered by:**

Lara Kawal 1/22/13  
North Olympic Peninsula Lead Entity

**Review and Normalization by:**

Lara Kawal 1/22/13  
North Olympic Peninsula Lead Entity for Salmon  
  
Walt Pearson, Ph.D  
Peapod Research

**Receipt of Scoring & Scoring Data Transfer:**

Cheryl Baumann Jan. 2013  
North Olympic Peninsula Lead Entity for Salmon

<b>NOPL 2013 Scoring Work Plan Narratives</b>	<b>Date:</b>
	14-Jan-13

**List of Work Plan Narratives 2013**

Category is either Capital or NON Capital (Non)

ID	Title	Sponsor	Category	Weighted Mean Score	Normalized Score	Max Score Capital
<b>NEW PROJECTS</b>						164.85
13101	Hoko River Remeander Engineering Feasibility Design	NOSC, LEKT, Makah	Capital	100.57	0.610	
13102	Little River LWD	LEKT	Capital	121.61	0.738	
13103	Ediz Hook Beach Restoration Phase 3	LEKT, WDNR, City of Port Angeles	Capital	110.69	0.671	
13104	Three Crabs Nearshore and Estuarine Restoration	NOSC	Capital	129.63	0.786	
<b>UPDATED PROJECTS</b>						
09086.1	Pysht Floodplain Acquisition and Restoration	NOLT, Makah, LEKT, WDOT, Mike Haggerty	Capital	106.45	0.646	
10080.1	Lyre River Estuary Protection and Restoration	NOLT	Capital	116.38	0.706	
09039.2	McDonald Creek Barrier Removal and Channel Restoration	Jamestown S'Klallam Tribe, WDFW, WSDOT, Agnew Ditch Co.	Capital	104.78	0.636	

# NOPLE 2013 Scoring Work Plan Narratives

Date:

14-Jan-13

## Ranking of Work Plan Narratives 2013

Category is either Capital or NON-Capital

New or updated projects are highlighted in yellow

Rank	Title	Project ID	Sponsor	Category	Weighted Mean Score	Normalized Score
1	Three Crabs Nearshore and Estuarine Restoration	13104	NOSC	Capital	129.63	0.786
2	Little River LWD	13102	LEKT	Capital	121.61	0.738
3	Elwha Revegetation Project	11087	LEKT/ONP	Capital	119.86	0.727
4	Dungeness River Floodplain Restoration (replaces project 35 and 36 Corps dike setback)	09092	JS'KT/CC/Army Corps	Capital	119.78	0.727
5	Dungeness Drift Cell Conservation	09032.1	JS'KT	Capital	118.76	0.720
6	Elwha ELJ Project	09016.1	LEKT	Capital	118.63	0.720
7	WA Harbor Restoration	09047.1	JS'KT	Capital	118.16	0.717
8	Lyre River Estuary Protection and Restoration	10080.1	NOLT	Capital	116.38	0.706
9	North Sequim Bay Drift Cell Conservation Project	09093	JS'KT	Capital	116.26	0.705
10	Dungeness Riparian Habitat Protection	09030.1	JS'KT, WDFW, NOLT	Capital	112.32	0.681
11	Pysht River Salt Marsh Estuary Restoration	09009.1	LEKT/Merrill and Ring/Cascade Conservancy	Capital	111.73	0.678
12	Ediz Hook Beach Restoration Phase 3	13103	LEKT, WDNR, COPA	Capital	110.69	0.671
13	Dungeness River Large Wood Restoration	09029.1	JS'KT/CC	Capital	110.61	0.671
14	Salt Creek Salt Marsh Reconnection	09014	CCD, NOSC & LEKT	Capital	109.84	0.666
15	Dungeness River Riparian Restoration	09031.1	JS'KT	Capital	108.62	0.659
16	Dungeness River Instream Flow Restoration - Storage	12098	CCD, WUA, CC, WWT	Capital	107.79	0.654
17	Elwha Watershed Adaptive Management Plan & Monitoring	09057.1	LEKT/NOAA/USGS/USFWS/WDFW	Non-Capital	88.07	0.653
18	Dungeness River - Meadowbrook Creek Restoration	09041.1	JS'KT, Dungeness Farms, Clallam Conservation District, Washington Department of Fish and Wildlife	Capital	107.55	0.652
19	Pysht Floodplain Acquisition and Restoration	09086.1	NOLT, Makah, LEKT, WDOT, Mike Haggerty	Capital	106.45	0.646
20	Dungeness River Instream Flow Restoration - Irrigation Efficiencies	09091.1	CCD, WUA	Capital	106.09	0.644
21	Elwha River Estuary Restoration Engineering Feasibility Project	12100	LEKT	Capital	104.79	0.636
22	McDonald Creek Barrier Removal and Channel Restoration	09039.2	JS'KT, WDFW, WSDOT, Agnew Ditch Co.	Capital	104.78	0.636
23	Acquisition of Priorities identified in the "Western Strait of Juan de Fuca Salmonid Habitat Conservation Plan"	12096	NOLT	Capital	104.38	0.633
24	12 River Channel Migration Zone Assessment	09066.1	JS'KT, LEKT, Makah & CC	Non-Capital	83.78	0.621
25	Hoko River Remeander Engineering Feasibility Design	13101	NOSC, LEKT, Makah	Capital	100.57	0.610
26	Elwha Conservation Planning	09054	NOLT, LEKT & CC	Non-Capital	81.95	0.607
27	Dungeness River Habitat Resurvey	09063.1	JS'KT, US Forest Service, Tetra Tech	Non-Capital	81.22	0.602
28	Clallam County Culvert Inventory	09050.1	LEKT/CC	Capital	97.74	0.593
29	Elwha River Salmon Enumeration Weir	09076	NPS, USGS, USFWS, NOAA, WDFW & LEKT	Non-Capital	79.97	0.593
30	Gray's Marsh Restoration and Feasibility Design Phase 1	10077.1	WDFW	Capital	97.59	0.592
31	Clallam Watertype Inventory and Assessment	09053	WFC	Non-Capital	79.48	0.589
32	Elwha River Estuary Restoration	09018	LEKT, CC, WDFW & TNC	Capital	96.96	0.588
33	Washington Harbor Habitat Protection Project	09046	NOLT & JS'KT	Capital	95.46	0.579
34	Elwha Culvert Replacement	09019	ONP & LEKT	Capital	95.41	0.579
35	Lower Morse Creek Restoration	10079.1		Capital	95.27	0.578
36	Nearshore Restoration Strategy for Twin Rivers	09011	CWI, WDFW, WDNR & LEKT	Capital	93.84	0.569
37	Hoko 9000 Road Abandonment	11083	LEKT/Rayonier	Capital	91.43	0.555
38	Siebert Creek Hwy 101 Fish Passage Restoration	09028.1	JS'KT - design project: conceptual bridge and site design to 10% engineering. WSDOT - final design, culvert removal, bridge construction.	Capital	91.27	0.554
39	Salt Creek Final Fish Passage Corrections Project	09015	LEKT, CCD & CC	Capital	90.81	0.551
40	Hoko 9000 Road Barrier Culvert	11082	LEKT/Rayonier	Capital	90.79	0.551
41	Pysht River LWD Project	11085	LEKT/Merrill and Ring	Capital	90.18	0.547
42	Elwha River Native Steelhead Brood Development Project	09048	LEKT	Non-Capital	73.38	0.544
43	Elwha Fish Propagation	11095	LEKT/ WDFW/ ONP	Non-Capital	73.21	0.543
44	NOPLE Area wide Monitoring Program	09075	NOPLE, CC, COPA & COS	Non-Capital	73.15	0.542
45	Clallam River Tributary Culvert Replacement	12097	NOSC	Capital	89.33	0.542
46	Salt Creek Habitat Protection	09013	NOLT	Capital	89.21	0.541
47	McDonald Creek Large Wood Restoration	10078.1	JS'KT	Capital	89.04	0.540
48	Siebert Creek Ecosystem Protection Phase 3 and 4	09027.1	NOLT	Capital	88.79	0.539
49	Little Hoko LWD Project	09001.1	LEKT	Capital	88.69	0.538
50	Bear and Cub Creek LWD project	11084	LEKT/Rayonier	Capital	88.61	0.538
51	Siebert Creek Large Wood Recovery	11090	JS'KT	Capital	88.31	0.536
52	Elwha River Nearshore Biodiversity Investigations	09056	NOAA, USGS & LEKT	Non-Capital	71.06	0.527
53	The Elwha Nearshore Action Plan	09055	CC & WDFW	Non-Capital	69.95	0.519

54	Port Angeles Harbor Basin Program	09059	NOPLÉ & MRC	Non-Capital	69.52	0.515
55	Morse Creek Property Acquisition	09026	WDFW	Capital	81.38	0.494
56	Ennis Creek Barrier Culvert	11088	LEKT/COPA	Capital	80.64	0.489
57	Johnson Creek Riparian Protection and Restoration	12099	NOLT/ JS'KT	Capital	80.41	0.488
58	Hoko River- Emerson Flats LWD Supplementation	09002	Makah	Capital	78.54	0.476
59	Nelson Creek Fish Passage Barrier Removal Project	09012	CC & WDNR	Capital	77.54	0.470
60	IMW Restoration Treatments	09010	LEKT	Capital	77.29	0.469
61	Dungeness Improved Fisheries Enforcement	09064	WDFW & JS'KT	Non-Capital	61.73	0.458
62	NOPLÉ area wide update stormwater management program	09072	NOPLÉ, CC, COPA & COS	Non-Capital	60.90	0.451
63	Jimmycomelately Creek & Dungeness River Habitat	09065	WDFW, JS'KT, NOLT & CC	Non-Capital	60.75	0.450
64	Chicken Coop Rd. Culvert Replacement	11094	CC	Capital	74.15	0.450
65	Ediz Hook Beach Nourishment	09023	COPA, Port of PA, WDNR & LEKT	Capital	71.33	0.433
66	Assess implementation of CAO, SMP & HPA ordinance.	09070	NOPLÉ, CC, COPA & COS	Non-Capital	57.15	0.424
67	Create Stable-funded Incentive program	09049	CC & CCD	Non-Capital	55.88	0.414
68	Lower Hoko River - Riparian Revegetation	09003	NOSC/ Makah	Capital	68.19	0.414
69	Ennis Creek Habitat Restoration & Protection	09020	WFC, LEKT & NOLT	Capital	66.67	0.404
70	NOPLÉ Area Wide Increase compliance with ordinances & codes	09071	NOPLÉ, CC, COPA & COS	Non-Capital	53.74	0.398
71	Clallam County Salmonid Outreach Planner	09051	CC & CCD	Non-Capital	52.78	0.391
72	Increase Recovery Capacity & Support NOPLÉ-wide	09067	NOPLÉ	Non-Capital	52.55	0.390
73	Sekiu Mainstem (RM 2-5) LWD Restoration	09005	Makah	Capital	63.38	0.384
74	Port Angeles Waterfront Property Acquisition	09024	NOLT, COPA, LEKT & VCRC	Capital	63.31	0.384
75	Sekiu, Clallam, Pysht Riparian Re-vegetation	09006	Makah/ LEKT	Capital	62.35	0.378
76	NOPLÉ-Area Wide Outreach Program	09068	NOPLÉ & WDFW	Non-Capital	49.36	0.366
77	NOPLÉ Area Adaptive Management Plan & Monitoring	09074	NOPLÉ, CC, COPA & COS	Non-Capital	48.12	0.357
78	Hoko River/ Hermans Creek - Instream LWD Supplementation	09004	Makah	Capital	58.71	0.356
79	Cassalery Creek Instream Flow Enhancement Project	09040	SWD	Capital	56.97	0.346
80	Clallam County Map Roadside Ditches	09052	CC	Non-Capital	44.09	0.327
81	Valley Creek Restoration	09021	VCRC, COPA	Capital	52.49	0.318
82	Dungeness River Management Team	09062	CC	Non-Capital	36.28	0.269
83	Elwha Morse Management Team	09058	CC	Non-Capital	35.26	0.261
84	WRIA-19 Watershed Council	09061	CC	Non-Capital	30.69	0.227

<b>NOPLE 2013 Ranking Work Plan Narratives</b>	Date:
	12-Feb-11

Enter Values in the Yellow Cells

Capital Project

Overall Weighted Score

NS = No Score Given

CV = Coefficient of Variation (Standard deviation/Mean as %)

**MAXIMUM POSSIBLE SCORE**

**164.85**

ID	Criteria for Ranking	Score 0 to 5 with 5 being best														Mean Score	Weight	Weighted Mean Score	CV (%)	
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12	Scorer 13	Scorer 14					
1	Watershed Priority	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	2.88	14.40	0.0
2	Addresses limiting factor	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	4.04	20.20	0.0
3	Addresses stock status and trends	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	2.56	12.80	0.0
4	Benefits an ESA-listed stock	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.33	16.65	0.0
5	Benefits other stocks	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.00	15.00	0.0
6	Protects high-quality fish habitat	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.82	19.10	0.0
7	Restores formerly productive habitat	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.88	19.40	0.0
8	Supports restoration and maintenance of ecosystem functions	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.67	18.35	0.0
9	Spatial-Temporal Scale of Influence	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.27	16.35	0.0
10	Project Readiness	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	2.52	12.60	0.0
	Mean	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00				
	CV (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
																			Overall Weighted Score w/ Watershed	164.85
																			Overall Weighted Score w/o Watershed	150.45

# NOPL 2012 Ranking Work Plan Narratives

Date:

7-Jan-12

## Final Watershed Priorities Sorted by Normalized Score

WRIA	System	Normalized Score (1 to 5)
18	Elwha River	5.00
18	Dungeness River	4.76
17	Nearshore	4.27
18	Nearshore	4.27
19	Nearshore	4.02
18	Morse Creek	3.90
19	Lyre River	3.05
19	Hoko River	2.93
19	Pysht River	2.93
19	Clallam River	2.80
19	Salt Creek	2.80
19	Sekiu River	2.68
17	Jimmycomelately Creek	2.56
18	Ennis Creek	2.56
18	McDonald Creek	2.32
18	Siebert Creek	2.20
19	Deep Creek	2.20
19	East Twin River	2.20
19	West Twin River	2.20
19	Jim Creek	1.83
19	Sail River	1.71
19	Whiskey Creek	1.71
18	Lees Creek	1.59
18	Meadowbrook Creek	1.59
18	Peabody Creek	1.59
18	Tumwater Creek	1.59
18	Valley Creek	1.59
19	Colville Creek	1.59
19	Bullman Creek	1.59

WRIA	System	Normalized Score (1 to 5)
19	Butler Creek (19.0112)	1.59
19	Field Creek	1.59
19	Joe Creek	1.46
19	Murdock Creek	1.46
18	Bell Creek	1.34
18	Bagley Creek	1.34
18	Dry Creek	1.34
17	Chicken Coop Creek	1.22
17	Dean Creek	1.22
17	Johnson Creek	1.22
18	18.0017 (Cooper Creek)	1.22
19	Olsen Creek	1.22
18	Cassalery Creek	0.98
18	Gierin Creek	0.98
17	17.0277	0.73
17	17.0284	0.73
17	17.0295	0.73
17	17.0296	0.73
17	17.0297	0.73
17	17.0300	0.73
18	18.0159	0.73
18	Agnew Creek (18.0172)	0.73
19	Falls Creek	0.73
19	19.0005	0.00
19	19.0006	0.00
19	19.0018	0.00
19	19.0019	0.00
19	19.0080	0.00
19	19.0081	0.00

## NOPLÉ 2013 Ranking Work Plan Narratives

### Criteria and Weights for Scoring and Ranking 2013 CAPITAL Projects North Olympic Peninsula Lead Entity

*Final wording and weights from Fall 2010 Retreat. New or modified wording in BOLDFACE Italics*

Criteria 1 through 10 inclusive are used to assess Work Plan Narratives for Capital Projects. All Criteria are used to assess Project Proposals for Current Year's funding.

ID	Criteria for Ranking	Criteria Narrative
1	<b>Watershed Priority</b>	This criterion is based on data concerning historical and current productivity <b>and stock diversity</b> of the NOPLÉ watersheds. The data was presented and the priorities established in the development of the 2008 Strategy. Consideration of watershed priority is mandated by regulation. This score is added by Lead Entity staff for the watershed(s) covered by the proposed project.
2	<b>Addresses limiting factor</b>	This criterion pertains to the extent to which the proposed work would address the limiting factor(s) relevant to the watershed and stock. How well does the proposed work address the relevant limiting factors?
3	<b>Addresses stock status and trends</b>	This criterion derives directly from NOPLÉ's GOAL to achieve robust fish stocks and pertains to the extent to which the proposed work takes into account stock status and trends. Is the proposed work appropriate for the current status and trends of the stock(s) of interest?
4	<b>Benefits an ESA-listed stock</b>	<b><i>This criterion derives directly from NOPLÉ's GOAL to address ESA-listed stocks. To what extent does the proposed work benefit ESA-listed stock(s)?</i></b>
5	<b>Benefits other stocks</b>	<b><i>This criterion derives directly from NOPLÉ's long-standing principle that "All stocks need attention." To what extent to which the proposed work provide tangible benefit(s) to non-listed stock(s)?</i></b>
6	<b>Protects high-quality fish habitat</b>	This criterion derives directly from NOPLÉ's GOAL to protect and restore fish habitat. This criterion pertains to the extent to which the proposed work would protect high-quality fish habitat. A project with acquisitions, easements, or other instruments that protects habitat would score well here. How well does the proposed instrument protect high-quality salmon habitat? How critical or important is the habitat in question? <b><i>A restoration only project or an ecosystem only project would score zero.</i></b>
7	<b>Restores formerly productive habitat</b>	This criterion derives directly from NOPLÉ's GOAL to protect and restore fish habitat. This criterion pertains to the extent to which the proposed work restores formerly productive habitat. A project with active measures to restore habitat would score well here. To what extent does the proposed work restore formerly productive salmon habitat? <b><i>An protection only project or ecosystem only project would score zero.</i></b>
8	<b>Supports restoration and maintenance of ecosystem functions</b>	This criterion derived directly from NOPLÉ's GOAL to restore and maintain ecosystem function and this pertains acquisition, restoration and combination projects. This criterion pertains to the extent to which the proposed work restores ecosystem function(s). To what extent does the proposed work support restoration or recovery of ecosystem function(s)? A project that restores a number ecosystem processes would score well here.
9	<b><i>Spatial-Temporal Scale of Influence</i></b>	<b><i>This criterion addresses the scale in space and time over which the benefits of the project would extend. A project for which the benefits would extend over a region or watershed and for years to decades would score high. Projects of local extent or temporary duration would score lower.</i></b>
10	<b><i>Project Readiness</i></b>	<b><i>This criterion addresses how ready are projects to implement. A project that can be implemented within the current year should score high. A project that is several years away should score low.</i></b>
11	<b>Likelihood of success based proposer's past success in implementation</b>	This criterion is a standard one in project selection and management. What is the probability that the project sponsor will succeed with the proposed work given their previous experience and current expertise and capability with the type of work proposed?
12	<b>Likelihood of success based on approach</b>	This criterion is a standard one in project selection and management. Is the approach appropriate to the work proposed? What is the probability of success of the proposed approach?
13	<b>Reasonableness of cost and budget</b>	This criterion is a standard one in project selection and management. Do the scope of work, overall estimated cost, and budget align? Are the budget items and costs reasonable given the scope of work?

Date:  
14-Jan-13

New Mean Weight
2.88
4.04
2.56
3.33
3.00
3.82
3.88
3.67
3.27
2.52
1.85
2.86
2.17

<b>NOPLE 2013 Ranking Work Plan Narratives</b>	Date:
	14-Jan-13

Enter Values in the Yellow Cells

Capital Project 13101  
Hoko River Remeander Engineering Feasibility Design

Overall Weighted Score  
**100.57**

NS = No Score Given  
CV = Coefficient of Variation (Standard deviation/Mean as %)

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)										
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12														
1	Watershed Priority	4.02	NS	4.02	4.02	4.02	4.02	NS	4.02	NS	NS	NS	4.02	4.02	2.88	11.58	0.0										
2	Addresses limiting factor	4	NS	3	4	4	4	NS	2.5	NS	NS	NS	4	3.64	4.04	14.72	17.2										
3	Addresses stock status and trends	4	NS	2	4	5	4	NS	2.5	NS	NS	NS	2	3.36	2.56	8.59	35.2										
4	Benefits an ESA-listed stock	0	NS	0	4	4	2	NS	0	NS	NS	NS	3	1.86	3.33	6.18	100.4										
5	Benefits other stocks	5	NS	3	4.5	5	4	NS	0	NS	NS	NS	2	3.36	3.00	10.07	54.9										
6	Protects high-quality fish habitat	0	NS	0	0	0	0	NS	0	NS	NS	NS	0	0.00	3.82	0.00	#DIV/0!										
7	Restores formerly productive habitat	4	NS	3	5	5	5	NS	0	NS	NS	NS	4	3.71	3.88	14.41	48.4										
8	Supports restoration and maintenance of ecosystem functions	4	NS	2	4	5	5	NS	3	NS	NS	NS	4	3.86	3.67	14.16	27.7										
9	Spatial-Temporal Scale of Influence	4.5	NS	2	4	5	4	NS	2.5	NS	NS	NS	3	3.57	3.27	11.68	30.7										
10	Project Readiness	5	NS	4	3	4	5	NS	2.5	NS	NS	NS	2	3.64	2.52	9.18	32.4										
<b>Mean Score of Individual Scorer</b>													3.45	NS	2.30	3.65	4.10	3.70	NS	1.70	NS	NS	NS	2.80	<b>Overall Weighted Score w/ Watershed</b>	<b>100.57</b>	
<b>CV (%) within Individual Scores</b>													53.9777	#DIV/0!	61.7208	37.6769	37.1465	42.3409	#DIV/0!	90.159	#DIV/0!	#DIV/0!	#DIV/0!	47.0593			<b>Overall Weighted Score w/o Watershed</b>
<b>Mean of all scorers - 2 ST DEV</b>													1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	3.102	Mean all scorers	
<b>Mean of all scorers + 2 ST DEV</b>													4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	0.864	SD all scorers	
<b>Outside 2 ST DEVs?</b>													N	N	N	N	N	N	N	N	N	N	N	N	1.727	2XSD all scorers	

Scorer ID	Comments
1	There are no ESA listed species, but this project clearly benefits species of concern and multiple species.
5	Hoko River Remeander Engineering Feasibility Study - Impressive addition to the 3-Year Work Plan; Attention to the lower portions of the Hoko and Lyre, particularly the estuaries, was very welcome.
8	Hoko River Remeander Engineering Feasibility Study - Although this could potentially lead to a great restoration effort, it is merely a feasibility assessment and thus scores low on most criteria.
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species, McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

<b>NOPL 2013 Ranking Work Plan Narratives</b>	Date:
	14-Jan-13

Enter Values in the Yellow Cells

Capital Project 13102

Overall Weighted Score

NS = No Score Given

CV = Coefficient of Variation (Standard deviation/Mean as %)

Little River LWD

121.61

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)	
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12					
1	Watershed Priority	5.00	NS	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	2.88	14.40	0.0
2	Addresses limiting factor	5	NS	2	3.5	5	5	4	4	5	4	4	4	4	4.14	4.04	16.71	21.7
3	Addresses stock status and trends	4	NS	2	4	5	5	5	4.5	5	5	4	3	4.23	2.56	10.82	23.3	
4	Benefits an ESA-listed stock	5	NS	3	4.5	5	5	4	4.5	5	4	4	3	4.27	3.33	14.23	17.6	
5	Benefits other stocks	4.5	NS	2	3	5	5	3	4	5	4	3	2	3.68	3.00	11.05	31.1	
6	Protects high-quality fish habitat	0	NS	0	0	0	0	0	0	0	2	4	0	0.55	3.82	2.08	237.1	
7	Restores formerly productive habitat	4	NS	2	3.5	5	5	4	3.5	3	4	5	4	3.91	3.88	15.17	23.5	
8	Supports restoration and maintenance of ecosystem functions	5	NS	1	3.5	5	5	4	5	4	4	5	4	4.14	3.67	15.18	28.7	
9	Spatial-Temporal Scale of Influence	5	NS	1	4	4	5	3	3.5	4	3.5	4	3	3.64	3.27	11.89	30.2	
10	Project Readiness	5	NS	2	4	4	5	5	4	4	4	4	3	4.00	2.52	10.08	22.4	
<b>Mean Score of Individual Scorer</b>		4.25	NS	2.00	3.50	4.30	4.50	3.70	3.80	4.00	3.95	4.20	3.10	<b>Overall Weighted Score w/ Watershed</b>		<b>121.61</b>		
<b>CV (%) within Individual Scores</b>		37.9432	#DIV/0!	66.6667	38.6859	36.4424	35.1364	40.3901	37.8313	39.0868	21.0548	15.0585	44.2039	<b>Overall Weighted Score w/o Watershed</b>		<b>107.21</b>		
<b>Mean of all scorers - 2 ST DEV</b>		2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	3.755 Mean all scorers				
<b>Mean of all scorers + 2 ST DEV</b>		5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	0.705 SD all scorers				
<b>Outside 2 ST DEVs?</b>		N	N	N	N	N	N	N	N	N	N	N	N	1.410 2XSD all scorers				

Scorer ID	Comments
1	In terms of scale of influence, this is a very impressive project. LWD implementation would build upon the large scale restoration project that is being undertaken with dam removals and associated projects, and this is one of the first areas available for recolonization by salmon.
5	Little River LWD - Impressive addition to the 3-Year Work Plan
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

<b>NOPLE 2013 Ranking Work Plan Narratives</b>	Date:
	14-Jan-13

Enter Values in the Yellow Cells

Capital Project 13103

Overall Weighted Score

NS = No Score Given

Ediz Hook Beach Restoration Phase 3

110.69

CV = Coefficient of Variation (Standard deviation/Mean as %)

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)	
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12					
1	Watershed Priority	4.27	NS	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	2.88	12.30	0.0
2	Addresses limiting factor	5	NS	2	4	5	3	3	4	4	3.5	4.5	3	3.73	4.04	15.06	25.0	
3	Addresses stock status and trends	5	NS	2	3.5	3	3	3	3.5	5	3	4	2	3.36	2.56	8.61	29.8	
4	Benefits an ESA-listed stock	3.5	NS	2	4	4	4	3	4	5	2	4	2	3.41	3.33	11.35	29.9	
5	Benefits other stocks	4.5	NS	2	3.5	4	4	3	4	4	4	4	2	3.55	3.00	10.64	24.0	
6	Protects high-quality fish habitat	0	NS	0	0	0	0	0	0	0	2	4	0	0.55	3.82	2.08	237.1	
7	Restores formerly productive habitat	5	NS	2	4	4	5	3	4	4	3.5	4	3	3.77	3.88	14.64	23.2	
8	Supports restoration and maintenance of ecosystem functions	5	NS	1	4	4	4	3	5	4	3.5	4	3	3.68	3.67	13.51	29.9	
9	Spatial-Temporal Scale of Influence	5	NS	1	3.5	5	5	3	3.5	4	4	5	2	3.73	3.27	12.19	35.7	
10	Project Readiness	5	NS	4	4	4	5	5	4	3	4	4	3	4.09	2.52	10.31	17.1	
<b>Mean Score of Individual Scorer</b>		4.23	NS	2.03	3.48	3.73	3.73	3.03	3.63	3.73	3.38	4.18	2.43	<b>Overall Weighted Score w/ Watershed</b>		<b>110.69</b>		
<b>CV (%) within Individual Scores</b>		37.0361	#DIV/0!	63.9983	35.9826	38.2888	40.3239	42.0849	36.9694	38.2888	24.0602	8.01846	46.2292	<b>Overall Weighted Score w/o Watershed</b>		<b>98.39</b>		
<b>Mean of all scorers - 2 ST DEV</b>		2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	3.41 Mean all scorers				
<b>Mean of all scorers + 2 ST DEV</b>		4.78	4.78	4.78	4.78	4.78	4.78	4.78	4.78	4.78	4.78	4.78	4.78	0.68084173 SD all scorers				
<b>Outside 2 ST DEVs?</b>		N	#####	Y	N	N	N	N	N	N	N	N	N	1.36168345 2XSD all scorers				

Scorer ID	Comments
1	This is a very important project for the restoration of Port Angeles Harbor, and addresses a key limiting factor, degradation of the Hook, a natural sand spit.
5	Ediz Hook Beach Restoration Phase 3 - Impressive addition to the 3-Year Work Plan
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

<b>NOPLE 2013 Ranking Work Plan Narratives</b>	Date:
	14-Jan-13

Enter Values in the Yellow Cells

Capital Project 13104

Overall Weighted Score

NS = No Score Given

CV = Coefficient of Variation (Standard deviation/Mean as %)

Three Crabs Nearshore and Estuarine Restoration

129.63

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12				
1	Watershed Priority	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	NS	NS	4.76	4.76	4.76	2.88	13.70	0.0
2	Addresses limiting factor	4.5	4.8	3	4.5	5	5	4	4	NS	NS	4.5	4	4.33	4.04	17.49	14.0
3	Addresses stock status and trends	4	4.8	2	3.5	5	5	4	4	NS	NS	5	4	4.13	2.56	10.57	22.4
4	Benefits an ESA-listed stock	4	5	4	4	5	5	3	4	NS	NS	5	4	4.30	3.33	14.32	15.7
5	Benefits other stocks	5	5	3	4	4	5	5	4.5	NS	NS	3.5	3	4.20	3.00	12.60	19.6
6	Protects high-quality fish habitat	0	0	0	3	0	0	0	0	NS	NS	4	0	0.70	3.82	2.67	213.5
7	Restores formerly productive habitat	5	4.8	4	4	5	5	4	3.5	NS	NS	5	4	4.43	3.88	17.19	13.1
8	Supports restoration and maintenance of ecosystem functions	5	4.9	4	4	5	5	4	5	NS	NS	5	4	4.59	3.67	16.85	11.1
9	Spatial-Temporal Scale of Influence	5	4.8	3	4	5	5	3	3.5	NS	NS	5	4	4.23	3.27	13.83	19.9
10	Project Readiness	5	4.8	4	3	4	5	5	3.5	NS	NS	4	3	4.13	2.52	10.41	19.3
<b>Mean Score of Individual Scorer</b>		4.23	4.37	3.18	3.88	4.28	4.48	3.68	3.68	NS	NS	4.58	3.48	<b>Overall Weighted Score w/ Watershed</b>		<b>129.63</b>	
<b>CV (%) within Individual Scores</b>		36.4174	35.1935	42.9922	14.6894	36.4107	35.1781	40.0666	37.9585	#DIV/0!	#DIV/0!	12.0993	38.1484	<b>Overall Weighted Score w/o Watershed</b>		<b>115.93</b>	
<b>Mean of all scorers - 2 ST DEV</b>		3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.98 Mean all scorers			
<b>Mean of all scorers + 2 ST DEV</b>		4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	0.47074881 SD all scorers			
<b>Outside 2 ST DEVs?</b>		N	N	N	N	N	N	N	N	N	N	N	N	0.94149762 2XSD all scorers			

ID	Comments
1	This promotes salmon recovery, promotes ecosystem awareness, builds upon previous conservation and restoration efforts, and involves many partnerships. Projects that are so multi-faceted in their deliverables should be encouraged.
5	Three Crabs Nearshore and Estuarine Restoration - Impressive addition to the 3-Year Work Plan
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

<b>NOPLE 2013 Ranking Work Plan Narratives</b>	Date:
	14-Jan-13

Enter Values in the Yellow Cells

Capital Project 09086.1  
Pysht Floodplain Acquisition and Restoration

Overall Weighted Score  
**106.45**

NS = No Score Given  
CV = Coefficient of Variation (Standard deviation/Mean as %)

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12				
1	Watershed Priority	NS	NS	2.93	2.93	2.93	2.93	2.93	NS	2.93	2.93	NS	2.93	2.93	2.88	8.43	0.0
2	Addresses limiting factor	NS	NS	2	3.5	5	5	4	NS	4	4	NS	4	3.94	4.04	15.91	23.9
3	Addresses stock status and trends	NS	NS	2	3.5	4	5	4	NS	4	3	NS	3	3.56	2.56	9.12	25.4
4	Benefits an ESA-listed stock	NS	NS	0	1	0	0	3	NS	2	1	NS	4	1.38	3.33	4.58	109.5
5	Benefits other stocks	NS	NS	2	3.5	5	5	5	NS	4	4	NS	3	3.94	3.00	11.81	27.5
6	Protects high-quality fish habitat	NS	NS	0	2	4	5	0	NS	0	3	NS	0	1.75	3.82	6.69	117.3
7	Restores formerly productive habitat	NS	NS	2	4	4	5	4	NS	4	4	NS	4	3.88	3.88	15.04	21.5
8	Supports restoration and maintenance of ecosystem functions	NS	NS	1	4	4	5	4	NS	4	4	NS	4	3.75	3.67	13.76	31.1
9	Spatial-Temporal Scale of Influence	NS	NS	1	4	3	5	3	NS	4	4	NS	3	3.38	3.27	11.04	35.2
10	Project Readiness	NS	NS	2	3	5	5	5	NS	4	4	NS	4	4.00	2.52	10.08	26.7
<b>Mean Score of Individual Scorer</b>		NS	NS	1.49	3.14	3.69	4.29	3.49	NS	3.29	3.39	NS	3.19	<b>Overall Weighted Score w/ Watershed</b>		<b>106.45</b>	
<b>CV (%) within Individual Scores</b>		#DIV/0!	#DIV/0!	64.2785	31.0175	40.578	38.2744	41.1357	#DIV/0!	40.6816	28.5829	#DIV/0!	38.551	<b>Overall Weighted Score w/o Watershed</b>		<b>98.02</b>	
<b>Mean of all scorers - 2 ST DEV</b>		1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	3.25 Mean all scorers			
<b>Mean of all scorers + 2 ST DEV</b>		4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	4.85	0.79885521 SD all scorers			
<b>Outside 2 ST DEVS?</b>		N	N	Y	N	N	N	N	N	N	N	N	N	1.59771042 2XSD all scorers			

Scorer/D	Comments
1	NS
5	Pysht Floodplain Acquisition and Restoration - Impressive improvement
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

<b>NOPLE 2013 Ranking Work Plan Narratives</b>	Date:
	14-Jan-13

Enter Values in the Yellow Cells

Capital Project 10080.1

Overall Weighted Score

NS = No Score Given

Lyre River Estuary Protection and Restoration

116.38

CV = Coefficient of Variation (Standard deviation/Mean as %)

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12				
1	Watershed Priority	NS	4.02	4.02	4.02	4.02	4.02	4.02	NS	4.02	4.02	NS	4.02	4.02	2.88	11.59	0.0
2	Addresses limiting factor	NS	4.7	2	4	4	4	4	NS	4	3.5	NS	3	3.69	4.04	14.90	21.1
3	Addresses stock status and trends	NS	4.8	2	4	4	4	3	NS	4	3	NS	3	3.42	2.56	8.76	24.5
4	Benefits an ESA-listed stock	NS	3.5	4	4	4	3	3	NS	3	2	NS	3	3.28	3.33	10.92	20.3
5	Benefits other stocks	NS	4.5	3	3.5	4	4	4	NS	4	3	NS	2	3.56	3.00	10.67	21.6
6	Protects high-quality fish habitat	NS	4.8	4	4	4	4	3	NS	5	4	NS	5	4.20	3.82	16.04	15.2
7	Restores formerly productive habitat	NS	0	0	1	3	1	1	NS	4	3	NS	2	1.67	3.88	6.47	84.9
8	Supports restoration and maintenance of ecosystem functions	NS	4.6	3	4	4	3	3	NS	4	3	NS	3	3.51	3.67	12.89	18.0
9	Spatial-Temporal Scale of Influence	NS	4.8	3	4	5	3	4	NS	4	4	NS	4	3.98	3.27	13.01	16.9
10	Project Readiness	NS	4.8	4	3	5	5	5	NS	5	4	NS	4	4.42	2.52	11.14	16.1
<b>Mean Score of Individual Scorer</b>		NS	4.05	2.90	3.55	4.10	3.40	3.40	NS	4.10	3.35	NS	3.30			<b>Overall Weighted Score w/ Watershed</b>	<b>116.38</b>
<b>CV (%) within Individual Scores</b>		#DIV/0!	36.6779	44.4117	26.9472	13.8264	31.6393	31.6393	#DIV/0!	13.8264	20.0278	#DIV/0!	28.7882			<b>Overall Weighted Score w/o Watershed</b>	<b>104.79</b>
<b>Mean of all scorers - 2 ST DEV</b>		2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	3.57 Mean all scorers			
<b>Mean of all scorers + 2 ST DEV</b>		4.42	4.42	4.42	4.42	4.42	4.42	4.42	4.42	4.42	4.42	4.42	4.42	0.4213899 SD all scorers			
<b>Outside 2 ST DEVs?</b>		N	N	N	N	N	N	N	N	N	N	N	N	0.8427798 2XSD all scorers			

Scorer ID	Comments
1	NS
5	Lyre River Estuary Protection and Restoration - Impressive improvement; Attention to the lower portions of the Hoko and Lyre, particularly the estuaries, was very welcome.
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
11	high quality fish habitat score based on the size and characterization of aquatic ecosystem in question and relation to fish usage
11	project 13104 has several ESA species that it will support
11	protects high quality, all are restoration 4's across
11	other stocks=bystander stocks, in a river, estuary or out in the straits

# NOPLE 2013 Ranking Work Plan

Date:  
14-Jan-13

Enter Values in the Yellow Cells

## Capital Project 09039.2

McDonald Creek Barrier Removal and Channel Restoration

## Overall Weighted Score

104.78

NS = No Score Given

CV = Coefficient of Variation (Standard deviation/Mean as %)

ID	Criteria for Ranking	Score 0 to 5 with 5 being best												Mean Criterion Score	Weight	Weighted Mean Score	CV (%)
		Scorer 1	Scorer 2	Scorer 3	Scorer 4	Scorer 5	Scorer 6	Scorer 7	Scorer 8	Scorer 9	Scorer 10	Scorer 11	Scorer 12				
1	Watershed Priority	2.32	2.32	2.32	2.32	2.32	NS	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.88	6.67	0.0
2	Addresses limiting factor	4.5	4.5	5.0	4.0	5	NS	4	3.5	2.5	4.0	4	4	4.09	4.04	16.53	17.1
3	Addresses stock status and trends	4	4.7	3.0	3.5	4	NS	4	4.0	2.0	3.0	4	4	3.65	2.56	9.36	20.2
4	Benefits an ESA-listed stock	4	3.5	2.0	4.0	3	NS	3	4.0	3.0	3.0	4	2	3.18	3.33	10.60	22.5
5	Benefits other stocks	4	4.0	2.0	3.5	2	NS	4	3.5	3.0	3.0	3	3	3.18	3.00	9.55	22.5
6	Protects high-quality fish habitat	0	0.0	0.0	0.0	0	NS	0	0.0	0.0	1.0	4	0	0.45	3.82	1.74	267.0
7	Restores formerly productive habitat	5	4.5	2.0	4.0	4	NS	4	2.5	3.0	4.0	5	4	3.82	3.88	14.81	25.0
8	Supports restoration and maintenance of ecosystem functions	5.0	4.5	1.0	3.5	4	NS	5	4.5	3.0	4.0	5	4	3.95	3.67	14.51	29.6
9	Spatial-Temporal Scale of Influence	5.0	4.5	1.0	3.5	2	NS	4	4.0	3.0	3.5	3	4	3.41	3.27	11.15	33.3
10	Project Readiness	4	4.6	4	4	5	NS	5	2.5	3	4	4	3	3.92	2.52	9.87	20.6
<b>Mean Score of Individual Scorer</b>		3.78	3.71	2.23	3.23	3.13	NS	3.53	3.08	2.48	3.18	3.78	3.03	<b>Overall Weighted Score w/ Watershed</b>		<b>104.78</b>	
<b>CV (%) within Individual Scores</b>		40.9709	40.2638	66.0642	38.4959	50.2552	#DIV/0!	41.827	42.7897	38.0618	30.339	22.6543	43.226	<b>Overall Weighted Score w/o Watershed</b>		<b>98.11</b>	
<b>Mean of all scorers - 2 ST DEV</b>		2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	3.20	Mean all scorers		
<b>Mean of all scorers + 2 ST DEV</b>		4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	0.50502025	SD all scorers		
<b>Outside 2 ST DEVs?</b>		N	N	N	N	N	N	N	N	N	N	N	N	1.0100405	2XSD all scorers		

Scorer ID	Comments
1	This write-up was very nicely done, addressing each of the criteria thoroughly yet concisely. This is also a project of importance to Dungeness and McDonald salmonids.
5	McDonald Creek Barrier Removal and Channel Restoration - Impressive improvement
9	Once again, excellent projects that have been well-thought-out.
9	While scoring, I considered providing maximum habitat in and near the Elwha system as a short-term key to long-term abundant recovery of the stocks that are impacted by lack of access within the watershed and/or lack of nearshore habitat. Proximity to the Elwha system, scale of protection/restoration, and project readiness were uppermost in my mind as I evaluated projects.
11	estuary projects get a 3 for ESA species. McDonald is above ESA habitat but water quality and natural processes still apply downstream
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1	0.7864
2	0.7377
3	0.7271
4	0.7266
5	0.7204
6	0.7196
7	0.7168
8	0.7060
9	0.7053
10	0.6814
11	0.6778
12	0.6714
13	0.6710
14	0.6663
15	0.6589
16	0.6540
17	0.6529
18	0.6524
19	0.6457
20	0.6436
21	0.6360
22	0.6356
23	0.6330
24	0.6210
25	0.6101
26	0.6075
27	0.6021
28	0.5929
29	0.5928
30	0.5920
31	0.5892
32	0.5882
33	0.5791
34	0.5788
35	0.5779
36	0.5693
37	0.5546
38	0.5537
39	0.5509
40	0.5508
41	0.5471
42	0.5439
43	0.5427
44	0.5423
45	0.5420
46	0.5412
47	0.5401
48	0.5386
49	0.5380

Scatterplot of Normalized Score Vs Rank

