

## **OVERVIEW**

The North Olympic Peninsula Lead Entity (NOPLE) represents an area which is exceptionally large and diverse. The region includes 88 unique populations of salmon stocks. The strength of these stocks currently ranges from strong to extremely weak. Four NOPLE ESUs are currently listed as Threatened under the Endangered Species Act, with two additional ESUs under consideration for listing.

NOPLE's goal is to achieve genetically diverse, self-sustaining, salmon populations that support healthy ecosystems as well as ceremonial, subsistence, recreational, and commercial fisheries. To that end, besides the ESA species, NOPLE priority stocks include those that are considered critical, uniquely vulnerable, or are of particular ecological and/or economic importance. Chinook, chum, coho, and steelhead are all considered priority stocks.

NOPLE strategy has been developed through the years by cooperative efforts of Lead Entities, including representatives of local governments and tribes; Technical Review Groups, and Citizen Facilitation Groups. The end result has been a prioritization of watersheds and stocks that has been used to rank and guide projects for greatest impact in protecting and restoring regional salmonid populations.

Watersheds with ESA species and/or multiple priority stocks have been designated as Priority Watersheds, with (potentially) highly productive watersheds considered Tier 1 and (potentially) moderate productive watersheds are Tier 2. The highest priority stocks are those identified as priority stocks in the respective Tier 1 and Tier 2 watersheds. Watersheds without ESA-listed stocks or lower productivity and less diversity are either Tier 3 or 4.

NOPLE currently encompasses two entirely different regions - Puget Sound (WRIAS 18 & 19) and Coastal (WRIA 20). Due to proposed funding changes and regional strategies, NOPLE is currently contemplating a proposed restructuring which would result in WRIA 20 leaving NOPLE and realigning with other coastal entities. Subsequently, NOPLE will also need to revisit its membership, goals, short and long-term strategies.

Amidst this, we have completed this initial, three-year project listing. Our listing includes sections for Dungeness (WRIA 17), WRIA 18 from Morse Creek to the Elwha, and WRIA 19 which continues West to Cape Flattery, Strait Nearshore and Non-Capital Projects.

## **Dungeness Recovery Strategy Summary**

The overall goal is to return salmon to harvestable numbers while protecting water quality and quantity and preventing loss of life and property from flooding.

### Ten-year objectives:

- Protect the best remaining habitat through conservation easement, regulatory action, and education/stewardship, and restore (rehabilitate) priority-degraded habitat by implementing the Dungeness River Management Team (DRMT) habitat restoration strategy.
- Increase data collection and analysis to provide a rebuilding exploitation rate (there is not a directed fishery on Dungeness chinook).
- Continue rebuilding the local Dungeness chinook broodstock through the WDFW Dungeness/Hurd Creek hatchery facilities.

### Three-year plan:

*Habitat restoration:* The DRMT and its technical arm, the River Restoration Workgroup, since the mid-1980's have invested a considerable amount of time and energy on habitat assessments, geomorphic studies, and life-history research projects. We first developed a rough list of habitat projects 12 years ago and have been continually improving this list. Our restoration priorities follow a "bottoms-up" philosophy, beginning with the estuary/river-mouth and moving upriver. Our 3-year list focuses on projects from the top 5 strategic restoration elements, drawn from the EDT analysis and the DRMT prioritization (Table 1, Section IIA).

Floodplain recovery is the focus of this first 3-year list, whether saltmarsh in the estuary or riverine floodplain throughout the lower 10 miles (Restoration element #1 and #3, DRMT). Disconnected floodplains cause a large number of problems including decreased summer low flows, higher energy during winter floods that scour redds, channel bed aggradation in the diked lower river (in the Dungeness below RM 2.6), or bed degradation with loss of spawning gravel in reaches with higher gradients (RM 5-10). We also have one LWD project associated with dike setback in the lower river (ranked #1), and extensive riparian planting planned for degraded reaches (ranked #5).

Finally salmon need rivers, irrigation withdrawal is a substantial impact on the Dungeness. Our piping projects for the Irrigation Water Conservation Plan are prioritized based upon in-river water savings. With irrigation season running to September 15, these savings mean higher migration and spawning flows for spring/summer chinook and summer chum (ranked #4).

*Habitat protection:* Much of the population growth in Clallam County over the next 20 years will be in the Dungeness watershed. The County has a small staff and needs additional funding to write and implement regulations to protect salmonids, along with developing and enhancing collaborative stewardship efforts. The Dungeness River Restoration Workgroup has prioritized key riparian parcels for acquisition or easement, funding is also needed to implement those recommendations (ranked #2).

*Harvest:* The co-managers (WDFW and Tribes) have prepared and are following a Puget Sound harvest management plan that is incorporated in the ESA 4(d) permit issued by the National Marine Fisheries Service in 2005. Consistent with that plan, additional work is required to facilitate execution of the plan, fill gaps in information and verify assumptions. The Puget Sound Technical Recovery Team has identified gaps in that plan and in the harvest management

component of the Dungeness recovery plan that need to be addressed. These include determining a rebuilding exploitation rate to help guide harvest management planning and execution, accommodating spatial distribution and diversity in the harvest management strategy, and incorporating northern fisheries (e.g. Canadian) in limitations on harvest. Improved fisheries enforcement capability and salmon population monitoring also are needed. Work on these tasks should proceed as soon as possible to strengthen harvest management protection of Dungeness Chinook. Specific tasks have been identified for implementation over the next three years.

*Hatchery:* The Dungeness chinook program has (since 1992) been exclusively focused on rebuilding the native chinook stock. The program recently transitioned from a captive brood program (1992-2004) to a brood collection/supplementation to help restore the stock in concert with habitat restoration work. The Puget Sound Technical Recovery Team, in its review of the hatchery management component of the Dungeness recovery plan, recommended that adaptive management of the hatchery strategy be improved. A key to effective adaptive management is monitoring and, in this regard, we have developed a biological monitoring program to better understand the distribution and life histories of Chinook and other potentially interacting salmonid species in the watershed and estuary. This biological monitoring program would be implemented over the next three years to begin providing information as soon as possible in support of adaptive management.

Three-Year Watershed Project Implementation Priorities for Dungeness Watershed

Priority	Action	Likely sponsor	Project or program?	Project/ program status	Total cost of first three years	Proposed SRFB (or grant) share	Local share or other funding	Source of other funds	2007		2008		2009	
									Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year
<b>Capital projects and programs</b>														
high	Rivers End Risk Assessment	Jamestown S'Klallam	Project	This is the next step following acquisition which is 80% completed	\$100,000	\$85,000	\$15,000		complete full assessment	\$100,000	na		na	
high	Rivers End saltmarsh recovery Phase I	Clallam County WDFW Jamestown S'Klallam	Project	WDFW owns part of the site, the dikes are on privately held property.	\$75,000	\$60,000	\$15,000		complete full study	\$75,000	na		na	
high	Rivers End saltmarsh recovery Phase II	Jamestown S'Klallam Clallam County WDFW	Project	This is a privately held property, Clallam County and JKT have shares in the site.	\$100,000	\$80,000	\$20,000		project planning conducted in above projects	\$0	remove/ open tidal barriers	\$100,000	na	
high	Rivers End saltmarsh recovery Phase III	Jamestown S'Klallam Clallam County WDFW	Project	WDFW owns the site.	\$800,000	\$640,000	\$160,000		project planning conducted in above projects	\$0	conduct grading	\$800,000	na	
high	Beebe acquisition	Jamestown S'Klallam/NOLT	Project	Landowner discussions have been initiated.	\$1,000,000	\$850,000	\$150,000		appraisal/ review/ title report/ negotiations	\$10,000	purchase	\$990,000	na	
high	ACOE dike setback Phase I	Clallam County	Project	Bureau of Rec alternative analysis in process	\$7,500,000	\$5,000,000	\$2,500,000		analysis and planning underway	\$0	design and permitting	\$200,000	construction/setback	
high	ACOE channel remeandering and ELJ placement Phase II	Jamestown S'Klallam	Project	dependent on Phase I but will occur at same time	\$2,175,000	\$1,800,000	\$375,000		na	\$0	design and permitting	\$175,000	channel reconstruction and ELJ installation	
high	Dungeness River Habitat Stewardship	WDFW, Clallam C, Jamestown, NOSC	Program	Ongoing need	\$103,200	\$103,200	In Kind	WCC, WDFW staff	Staff (0.34 FTE), mileage, supplies, equipment	\$34,400	Staff (0.34 FTE), mileage, supplies, equipment	\$34,400	Staff (0.34 FTE), mileage, supplies, equipment	
high	Jimmy Come Lately Creek Habitat Stewardship	WDFW, Jamestown, +	Program	Ongoing need	\$51,600	\$51,600	In Kind	WCC, WDFW staff	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	
med	Removal or setback of upper Haller dike	JSKT WDFW Clallam County	Project	Pending acquisition and the Middle Dungeness Restoration Plan	\$300,000	\$250,000	\$50,000		risk assessment	\$0	design and permitting	\$50,000	construction/setback	
med	Riparian reforestation	CCD JSKT Clallam County	Program	Identification of parcels with highest need.	\$150,000	\$130,000	\$20,000		landowner contacts/ planting	\$50,000	landowner contacts/ planting	\$50,000	landowner contacts/ planting	
med	Agnew Irrigation piping	Agnew Irrigation District	Project	Next step in implementing irrigation water conservation plan	\$500,000	\$425,000	\$75,000		na	\$0	design and partial construction	\$250,000	remaining construction	
high	Clallam-Cline-Dungeness Irrigation piping	Clallam-Cline Irrigation District	Project	Next step in implementing irrigation water conservation plan	\$3,000,000	\$1,000,000	\$2,000,000		entire project implementation	\$3,000,000	na	\$0	na	
high	Dungeness Irrigation piping	Dungeness Irrigation District	Project	Next step in implementing irrigation water conservation plan	\$2,500,000	\$1,000,000	\$1,500,000		engineering	\$250,000	construction	\$2,250,000	na	
not ranked	Protection Project, Phase 2	North Olympic Land Trust	Project	Developing	\$1,000,000	\$800,000	\$200,000	staff support	searches, surveys and appraisals	\$40,000	Negotiate and draft conservation easements	\$40,000	Purchase development rights	
<b>Total capital need</b>					<b>\$19,354,800</b>	<b>\$12,274,800</b>	<b>\$7,080,000</b>		<b>Total year 1 need</b>	<b>\$3,576,600</b>	<b>Total year 2 need</b>	<b>\$4,956,600</b>	<b>Total year 3 need</b>	
<b>Priority projects and programs benefitting non-listed species</b>														
not ranked	Population Monitoring and Analysis	WDFW/Tribe	Program	Not started	\$129,250	\$0	\$129,250		Staffing (0.5 FTE)	\$41,000	Staffing (0.5 FTE)	\$43,050	Staffing (0.25FTE)	
not ranked	Biological Monitoring Project	WDFW/Tribe	Program	Not started	\$825,800	\$0	\$825,800		Staffing (1 FTE - Bio., 4FTEs - Tech.)	\$303,300	Staffing (1 FTE - Bio., 4FTEs - Tech.)	\$257,400	Staffing (1 FTE - Bio., 4FTEs - Tech.)	
<b>Total non-capital need</b>					<b>\$955,050</b>	<b>\$0</b>	<b>\$955,050</b>		<b>Total year 1 need</b>	<b>\$344,300</b>	<b>Total year 2 need</b>	<b>\$300,450</b>	<b>Total year 3 need</b>	

# Project Narratives – Dungeness

PROJECT	NARRATIVE
<p><b>Rivers End Risk Assessment</b></p>	<p>Clallam County, Jamestown S'Klallam Tribe, and WDFW, with grants from SRFB and USFWS, have been purchasing property at the mouth of the Dungeness (Rivers End) to remove infrastructure and reestablish a functional floodplain. A local dike prevents flooding of up to roughly 5-year flood events. Historical analysis by Brian Collins shows that since 1855 the delta has expanded seaward 500 meters. However, during floods, some riverflow reoccupies the 1855 channel. The assessment will analyze a range of channel locations, river dike removal alternatives and consequences, and potential hazards to bluff lot owners from the river relocating to its 1855 channel.</p> <p>Local landowners requested the study and further restoration would not occur without it. This project is part of a larger restoration element and was ranked #1 by the DRMT and #2 by EDT. The 1855 channel threatens to reoccupy its old channel annually. We need options to move forward with a plan.</p>
<p>Rivers End Saltmarsh Recover, Phase 1</p>	<p>Four saltwater dikes with a length of approximately 2000 ft were built in the 1850's. These are likely some of the oldest dikes in Puget Sound. We hypothesize that the configuration of historic floodplain and estuary in the Dungeness prior to diking allowed the river to export sediment through tidal processes rather than storing it in the bay as now occurs. Through this study, we will develop several alternatives to increase tidal flux from full dike removal to partial openings. In addition, we will study costs/benefits of lowering adjacent WDFW property to saltmarsh elevations. The plan will present alternatives to discuss with the local community; the best option fitting community with fish and wildlife needs will be selected. An engineered design will be the final product from Phase I. This study is a necessary prerequisite to implementing the project. The relic tidal dikes block slough habitat, which has been found throughout Puget Sound to be highly productive for rearing salmonids.</p>
<p>Rivers End Saltmarsh Recovery, Phase II</p>	<p>Construction costs for dike removal and opening up slough channels directly adjacent to the dikes. It is assumed that the full 2000 ft of dikes are removed. The benefits are discussed above.</p>
<p>Rivers End Saltmarsh Recovery, Phase III</p>	<p>Construction costs to lower roughly 18 acres of WDFW property to saltmarsh elevation and open up slough channels that have been disconnected behind the dikes. The design will be developed in Phase I.</p>

Rivers End Saltmarsh Recovery, Phase III	The benefits are discussed above.
Beebe Acquisition	<p>In the lower Dungeness River from RM 1.3-2.6, the entire reach is diked on both sides of the river. Technical Studies have placed tremendous importance on reestablishing the floodplain in the lower 2.6 miles reach to restore salmon habitat and functional channel processes. Ownership of the land (including the private dike on the west side) is imperative to progress with planning and implementation of dike setback and modifications. The Beebe family owns all the existing riparian forest on both sides of the river. This project is to purchase 125 acres of their floodplain at fair market value.</p> <p>The WRIA 18 Limiting Factors Analysis for salmon and steelhead explains the relationship of Dungeness River floodplain modifications to habitat quality. The project is listed as a top priority by the River Restoration Work Group, Dungeness River Management Team and is included in the Dungeness Profile for chinook recovery.</p>
ACOE Dike Setback, Phase 1	<p>Floodplain and river recovery in the lower 2.6 miles was ranked #1 by the DRMT and #2 in EDT. The lower river is straightened between two dikes, which cuts off relic meanders and a substantial area of floodplain (River mile 0.8-2.6). Hec-Ras modeling has shown that floods greater than bankfull would occupy floodplain beyond the dikes on both sides of the river. The Bureau of Reclamation is presently running hydraulic models of various dike setback alternatives to provide stakeholders information to help make a decision. Funding is needed for project engineering and construction. The costs are based on moving and reconstructing at a new location the entire dike from Schoolhouse Bridge upstream to the end at RM 2.6.</p> <p>This is considered the most important project for habitat recovery in the Dungeness. Historically this was prime summer chum and lower pink spawning habitat, and rearing and feeding habitat for chinook and bulltrout. Summer chum is practically extirpated in the Dungeness. Summer chum spawning habitat is entirely contained within the diked reaches.</p>

<p>ACOE Channel Remeandering and ELJ Placement, Phase II</p>	<p>Floodplain and river recovery in the lower 2.6 miles was ranked #1 by the DRMT. This is a companion project to Phase I. The Bureau of Reclamation in their report "Physical processes, human impacts, and restoration issues of the lower Dungeness River," found that the riverbed has aggraded at multiple locations within the diked reach due to sediment deposition upstream of constrictions caused by dikes. Aggradation was found up to be up to 8 ft. The purpose of this phase is to strategically re-meander the river and add wood to prevent channel avulsion into agricultural fields. Both Phase I and II are necessary for habitat and floodplain recovery in this reach.</p> <p>This is considered the most important project for habitat recovery in the Dungeness. Historically this was prime summer chum and lower pink spawning habitat, and rearing and feeding habitat for chinook and bulltrout. Summer chum is practically extirpated in the Dungeness. Summer chum spawning habitat is entirely contained within the diked reaches.</p>
<p>Dungeness River Habitat Stewardship</p>	<p>WDFW, Clallam County, Jamestown S'Klallam Tribe, and NOLT have acquired property and conservation easements for habitat conservation in the Dungeness Watershed for the fish and wildlife resources that are dependent on these habitats. This acquisitions and conservation easements have resulted in about 300 acres of land, with more acquisitions in the works. The agencies and organizations that have ownership have a need for stewardship funding to assure that the conservation goals are met. Stewardship will focus on making sure the habitats are not eroded by neglect or improper use of the sites by people. Noxious weed removal, monitoring of property boundaries (to assure no encroachment by neighbors), and responding to reports by the public will be some actions that this stewardship funds will secure.</p>
<p>Jimmy Come Lately Creek Habitat Stewardship</p>	<p>WDFW and Jamestown S'Klallam Tribe have acquired property and conservation easements for habitat conservation in the Lower JimmyComeLately Creek system for the major restoration project accomplished at this site. WDFW and Jamestown S'Klallam Tribe have a need for stewardship funding to assure that ongoing conservation goals are met. Stewardship will focus on making sure the habitats are not eroded by neglect or improper use of the sites by people. Noxious weed removal, monitoring of property boundaries (to assure no encroachment by neighbors), and responding to reports by the public will be some actions that this stewardship funds will secure.</p>

<p>Dungeness Corridor Protection(Hurd Creek-WDFW Hatchery)</p>	<p>This project is a combination of all identified acquisitions from RM 2.6 to 11.3 for critical habitat protection. Priority acquisitions have been identified in <u>Recommended Land Protection Strategies for the Dungeness River Riparian Area</u> (2003) and total approximately 400 acres. Priority acquisitions focus upon functional side channel habitat utilized by all salmonids, especially coho, trout, and chinook. The River Restoration Work Group reaffirmed priorities in 2006 in a cooperative planning effort with WDFW and USFWS. Protection in perpetuity could be achieved by fee simple or conservation easement purchase. Conservation easements would meet a rigorous standard of habitat protection through review by the River Restoration Work Group.</p>
<p>Clallam-Cline Irrigation Water Conservation Project</p>	<p>The Clallam-Cline Irrigation Water Conservation Project is a comprehensive irrigation ditch-piping project that will result in anticipated in-river water savings of 6 cfs. Presently, the Clallam Ditch Company, Cline Irrigation District and Dungeness Irrigation Group jointly operate and maintain a single diversion on the Dungeness River, approximately one mile from the diversion the irrigation canal splits into three separate canals that deliver water to the irrigators of the three entities. The entire distribution systems of the Clallam and Cline will be combined and enclosed, resulting in complete elimination of conveyance losses, elimination of tailwater spills at the end of the systems, and pollutants will no longer be able to enter the system.</p> <p>This project is identified as a high-priority project in the Dungeness River Agricultural Water Users Association Comprehensive Water Conservation Plan, the Dungeness River Comprehensive Irrigation District Management Plan, and was nominated by the Water Users Association as one of their top two priority projects for water conservation. This project is a joint effort of the Clallam Ditch Company, Cline Irrigation District, Dungeness Irrigation Group,</p> <p>Clallam Conservation District, Washington Department of Ecology, Washington Conservation Commission, and the USDA Natural Resources Conservation Service. Over \$1.5 million has already been secured for this project and nearly \$1 million more is available through the Conservation Commission Irrigation Efficiencies Program.</p>

<p>Dungeness Irrigation District Water Conservation Project</p>	<p>The Dungeness Irrigation District Water Conservation Project is a comprehensive irrigation ditch-piping project that will result in anticipated in-river water savings of 3-4 cfs. The entire distribution system of the Dungeness District will be enclosed, resulting in complete elimination of conveyance losses, elimination of tailwater spills at the end of the system, and pollutants will no longer be able to enter the system.</p> <p>This project is identified as a high-priority project in the Dungeness River Agricultural Water Users Association Comprehensive Water Conservation Plan, the Dungeness River Comprehensive Irrigation District Management Plan, and was nominated by the Water Users Association as one of their top two priority projects for water conservation. This project is a joint effort of the Dungeness Irrigation District, Clallam Conservation District, Washington Department of Ecology, and the Washington Conservation Commission. Nearly \$900,000 has already been secured for this project and over \$600,000 more is available through the Conservation Commission Irrigation Efficiencies Program.</p>
<p>Agnew Irrigation Piping</p>	<p>The proposed project involves placing five open irrigation laterals (~7.2 miles) into enclosed pipes within the Agnew Irrigation District. The project will result in an estimated in-river water savings of 2 cfs. A secondary benefit of the project is to improve water quality by eliminating the pathway for contaminants that enter the irrigation system at these ditch locations. The ditches proposed for pipes tail into Matriotti Creek, and ultimately Dungeness River and Bay, and are highly suspected for fecal coliform (fc) loading. This proposal will benefit all salmon stocks that utilize the Dungeness River and its tributaries. Specifically, the project is aimed to increasing Dungeness River instream flow and habitat for the three ESA-threatened species: Spring/Summer Chinook, Summer Chum, and Bull Trout.</p> <p>This project is identified as a high-priority project in the Dungeness River Agricultural Water Users Association Comprehensive Water Conservation Plan, and is recommended in several watershed-planning studies and reports. It is part of a larger community effort toward salmon recovery and watershed restoration.</p>
<p>Siebert Ecosystem Habitat Protection, Phase II</p>	<p>In lower Siebert Creek, 2 miles of contiguous freshwater and estuarine salmon habitat will be perpetually protected using conservation easements, which will eliminate the possibility of development and will provide Siebert Creek the highest level of protection at this vulnerable site. The project reach, extending from the mouth to RM 2.14, contains a nearly pristine estuary and a riparian corridor in unusually good condition. Fish species include coho, cutthroat and steelhead.</p>

<p>Siebert Ecosystem Habitat Protection, Phase II Continued</p>	<p>Siebert Ecosystem Habitat Protection, Phase I, was funded with a SRFB grant in 2002 and protected in perpetuity more than 80 riparian acres as well as LWD installation. Phase II of the project will follow recommendations outlined in the WRIA 18 Plan and will align with the NOPL strategy to protect the best habitat for multiple stocks. Goals for Phase II are to protect an additional 106 riparian acres and provide management for 33 acres of conservation ownership</p>
<p><b>Non-Capital Needs</b></p>	
<p>Dungeness Chinook Population Analysis And Modeling to Support Harvest, Hatchery and Habitat Management and Planning</p>	<p>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. Coded wire tag data required for the analysis are being collected and would provide the basis for the analysis. 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</li> <li>• provide historical modeling input for preseason fisheries planning.</li> <li>• Based on the above analyses, 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. Also, with respect to harvest management, EDT modeling would be used to make a short-term alternative estimate of RER and to analyze potential harvest effects on Chinook spatial distribution.</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</p>

<p>Dungeness Chinook Population Analysis And Modeling to Support Harvest, Hatchery and Habitat Management and Planning continued</p>	<p>identified by the Puget Sound Technical Recovery Team (TRT). The TRT recognized the need for estimates of exploitation rates and for exploitation rate guidelines. It also recommended incorporating diversity and spatial structure in the harvest management strategy and noted that limits on the exploitation rate currently were applied only to southern U.S. fisheries, whereas the need existed for a limit to include all effective fisheries – notably the northern fisheries. Furthermore, the TRT noted that documentation of assumptions used in the EDT model could be improved as they relate to the VSP parameters and potential population responses – in particular as applies to hypothesized effects of restoration actions on diversity and spatial structure. The TRT also recommended conducting EDT sensitivity analyses to test model assumptions. The above described program either directly addresses or assists in addressing these TRT concerns. 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>Dungeness Chinook Biological Monitoring Project</p>	<p>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; for example, the assumption that delaying hatchery releases of yearling coho salmon and steelhead reduces potential predation on Chinook juveniles. The project requires hiring a biologist and four technicians, and providing transportation, equipment and supplies. Following are tasks to be undertaken under the project.</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</li> </ul>

Dungeness Chinook Biological Monitoring  
Project Continued

- 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.
- Conduct steelhead spawner surveys in April and May, as time permits (priority is with juvenile sampling of other species), to determine stock status.
- As time permits, snorkel survey index areas throughout the system to determine relative species abundance and rearing habitats.

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. This long-term project provides biological monitoring in the watershed and estuary essential for an effective adaptive management program. The project should be implemented as soon as possible and is a high priority for action over the next three years.

## **Nearshore Summary**

The North Olympic Peninsula nearshore is a well accepted critical linkage for Washington ecosystem and salmonid resources. The North Olympic Peninsula Lead Entity (NOPLE) has been developing a nearshore restoration strategy for the last three years. Authors of this strategy have also been involved with various elements of recovery planning efforts of the Dungeness and Elwha watersheds.

NOAA published the draft Puget Sound Recovery Plan for Puget Sound Chinook in spring 2006. This narrative is an overview of how the North Olympic Peninsula links the locally-based, technically reviewed NOPLE nearshore strategy with the draft PS Recovery plan, and how the project list submitted with this cover page address the 10 year recovery plan goals and objectives.

The draft Puget Sound Recovery Plan regional nearshore section lists a number of nearshore recovery strategies that focus on locally collaborated habitat assessment, protection, and restoration for Puget Sound Chinook and other species (see section 7.1.1). The attached set of projects, which are published in the NOPLE nearshore strategy and all Tier 1 high priority, address each of the strategies to achieve viable salmon and bull trout populations as outlined in the table below. In addition, these projects provide further protection than the existing recovery plan in that the covers the entire Strait of Juan de Fuca including west to Cape Flattery.

This area is undisputedly used by migrating forage fish and salmon, including Puget Sound Chinook, but for some unclear reason, is not included in the Puget Sound Chinook ESU or designated as critical habitat. We strongly recommend this omission be remedied, and understand that Shared strategy supports our inclusion of this geographic area for nearshore priority funding.

Table 1. WRIA 19&20 nearshore projects and relationship with draft Puget Sound Chinook recovery plan's Regional recovery strategy (see section 7.1 of draft Puget Sound recovery plan for a discussion of goals and objectives)

Project	Protect functioning habitat and high quality water quality commensurate with the needs of viable salmon and bull trout populations	Improve the function of nearshore habitats by strategic and locally acceptable actions to restore, rehabilitate natural ecosystem processes	Conduct research, monitor conditions and actions, and evaluate recovery actions to support refinement of management strategies and actions
<i>Protect coastal bluffs in Travis &amp; Paradise Cove Spit</i>	X	X	X
<i>Pit Ship Point Salt Marsh Restoration</i>	X	X	X
<i>Washington Harbor Protection Project</i>	X	X	X
<i>WA Harbor Tidal Flow Restoration</i>	X	X	X
<i>PA Harbor A-Frame Removal</i>	X	X	X
<i>Graysmarsh/Gierin Creek Protection</i>	X	X	X
<i>Dungeness Bay Drift Cell Protection</i>	X	X	X
<i>Elwha River Estuary Restoration</i>	X	X	X
<i>Bulkhead Removal N. of Wayne Marina</i>	X	X	X
<i>Salt Crk Salt Marsh Reconnection</i>	X	X	X
<i>Twin Rivers Restoration</i>	X	X	X
<i>Neah Bay Pontoon Removal</i>	X	X	X
<i>Neah Bay Nearshore Creosote Removal</i>	X	X	X
<i>Neah Bay Breach Base</i>	X	X	X
<i>All WRIA H20</i>	X	X	X

<i>quality assessment</i>			
<i>All WRIA Fish Use Assessment</i>	X	X	X
<i>Genetic Stock ID</i>	X	X	X
<i>Eelgrass, Ulvoid Assessment</i>	X	X	X
<i>Dungeness Bay H2O Quality Assessment</i>	X	X	X
<i>Forage Fish Surveys</i>	X	X	X

Table 2. Protection and restoration actions identified for eastern Strait of Juan de Fuca (from regional and Elwha sub basin sections of recovery plan)

<b>Project</b>	<b>Protection</b>		<b>Restoration</b>			<b>Monitoring/Assessment</b>
	Protect pocket estuaries	Protect sediment processes, including drift cells that support critical habitat	Water quality improvements-stormwater	Restore pocket estuaries	Restore migratory corridor	Document recovery of ecosystem processes over time
<i>Protect coastal bluffs in Travis &amp; Paradise Cove Spit</i>	X	X	X			
<i>Pit Ship Point Salt Marsh Restoration</i>	X	X	X	X	X	
<i>Washington Harbor Protection Project</i>	X	X	X			
<i>WA Harbor Tidal Flow Restoration</i>	X		X	X	X	
<i>PA Harbor A-Frame Removal</i>		X	X		X	X
<i>Graysmarsh/Gierin Creek Protection</i>	X	X	X			
<i>Dungeness Bay Drift Cell Protection</i>	X	X				
<i>Elwha River Estuary Restoration</i>	X	X		X	X	X
<i>Bulkhead Removal N. of Wayne Marina</i>		X	X		X	
<i>Salt Crk Salt Marsh</i>	X		X	X	X	X

<i>Reconnection</i>						
<i>Twin Rivers Restoration</i>		X	X		X	X
<i>Neah Bay Pontoon Removal</i>		X	X		X	X
<i>Neah Bay Nearshore Creosote Removal</i>		X	X		X	X
<i>Neah Bay Breach Base</i>		X	X			

Three-Year Watershed Implementation Priorities for S rshed Strait Nearshore

									2007		
Priority Tier	Action	Likely sponsor	Project or program ?	Project/ program status	Total cost of first three years	Proposed SRFB (or grant) share	Local share or other funding	Source of other funds	Year 1 Scope	Year 1 Cost	YS
<b>Capital projects and programs</b>											
Tier 1	Protect coastal bluffs in Travis & S'Klallam Tribe(JKT)	Jamestown	Project	Developing	\$2,015,000	\$2,015,000	\$0	0	develop fee simple/conservation easement matrix	\$15,000	ir, p, p, ir
Tier 1	Pit Ship Point Salt Marsh	Conservation Dist. JKT	Project	Developing	\$90,000	\$90,000	\$0	0		\$10,000	
Tier 1	Washington Harbor	NOLT/JKT	Project	Developing	\$1,020,000	\$1,020,000	\$0	0		\$10,000	
Tier 1	WA Harbor Tidal Flows	Conservation Dist. JKT	Project	Developing	\$140,000	\$140,000	\$0	0		\$20,000	
Tier 1	PA Harbor A-Frame Removal	WDFW, Elwha, PA Dept. DNR	Project	Developing	\$485,000	\$100,000	\$375,000	DNR	contract work	\$10,000	
Tier 1	Graysmarsh/Gierin	Jamestown	Project	Developing	\$2,020,000	\$2,020,000	\$0	0			
Tier 1	Dungeness Bay	Jamestown	Project	Developing	\$520,000	\$520,000	\$0	0			
Tier 1	Elwha River	Elwha Tribe &	Project	Developing	\$1,060,000	\$1,000,000	\$60,000	NFWF	scope easement alternatives	\$30,000	d, e.
Tier 1	Bulkhead Removal	Jamestown	Project	Developing	\$120,000	\$120,000	\$0	0	develop bulkhead removal plan	\$10,000	re b.
Tier 1	Salt Crk Salt	WDFW, ElwhaTrib	Project	Developing	\$120,000	\$60,000	\$60,000	FFFP/NFWF	Develop restoration plan	\$10,000	C a.
Tier 1	Twin Rivers	WDFW, NO SC, NOLT	Project	Developing	\$570,738	\$60,000	510,000	NW Straits Foundatio	complete easement	\$10,000	ir, e.
Tier 1	Neah Bay Nearshore	Makah Tribe	Project	Developing	\$220,000	\$220,000	\$0	0		\$20,000	
Tier 1	Neah Bay Breach	Makah Tribe	Project	Developing	\$400,000	\$400,000	\$0	0		\$10,000	
Tier 1	Pit Sip Pt Migration	Conservation	Project	Developing	\$70,000	\$70,000	\$0	0		\$10,000	



		<i>Total non-capital need</i>			\$900,000	\$860,000	\$40,000		<i>Total year 1 need</i>	\$350,000	<i>T</i>
		<i>Priority projects and programs benefitting non-listed species</i>									<i>2</i>
Tier 1											
Tier 1											
Tier 2											
Tier 2											
Tier 3											
Tier 3											
		<i>Total non-capital need</i>			\$0	\$0	\$0		<i>Total year 1 need</i>	\$0	<i>T</i>
											<i>2</i>

## Project Narratives – Strait Nearshore

PROJECT	NARRATIVE
Protect Coastal Bluffs in Sequim Bay's Travis & Paradise Cove Spit	Protect coastal feeder bluffs within the Travis and Paradise Cove Spit drift cells. This project addresses nearshore processes, a dominant limiting factor in the Dungeness Nearshore. By providing easements we provide for long-term protections of over a mile of nearshore habitat in the central portion of critical habitat for recovery of Puget Sound Chinook as outlined in the Dungeness Recovery Plan....
Pit Ship Point Salt Marsh Restoration	This project addresses nearshore processes of estuarine connectivity and fish passage, a limiting priority factor within the Dungeness Recovery area. The project includes replacing an undersized culvert with a bridge to restore salt marsh connection. Restores Approximately 4 acres of estuarine/marsh habitat. The habitat is located 3.3 miles from Jimmycomelately Creek.
Washington Harbor Protection Project	Acquire or purchase easements on property in and immediately adjacent to Washington Harbor. This project addresses estuarine processes, a priority limiting factor for PS Chinook recovery in the Dungeness Recovery Plan. It provides fee simple purchase and or conservation easement subsequent protection of approximately 156 acres of estuarine and spit habitat.
WA Harbor Tidal Flow Restoration	<p>This project addresses access/connectivity of estuarine processes, primary limiting factors for salmonid recovery in the critical habitat of Dungeness nearshore. We will restore unrestricted tidal flow and flushing to the north end of Washington Harbor including removal of culvert and dikes. The project involves working with City of Sequim and private landowner to develop and implement the most workable plan to restore up to 33 acres of unvegetated and vegetated estuarine salt marsh habitat critical for Puget</p> <p>Sound Chinook and Eastern Strait of Juan de Fuca summer chum. The habitat is approximately 5 miles from Jimmy Come Lately Creek and approximately 7.5 miles from the Dungeness River Mouth.</p> <p>Sound Chinook and Eastern Strait of Juan de Fuca summer chum. The habitat is approximately 5 miles from Jimmycomelately Creek and approximately 7.5 miles from the Dungeness River mouth.</p>

<p>Washington Harbor to Dungeness Bay (including Jamestown shoreline): Elimination of Point and Non-Point Nutrients Sources</p>	<p>Non point pollution and ecosystem forcing and concomitant ulvoid mats are listed as a primary concern in the Puget Sound Recovery plan for the Eastern Strait of Juan de Fuca. In this project we conduct a comprehensive and regular assessment of eelgrass and Ulva presence in 5700 acres of shallow nearshore habitat where increasing Ulva presence is documented. This study should look not only at the conversion area, but also the local conditions that appear to favor conversion to Ulva. Minimize the growth of Ulva (spp) by eliminating point and non-point source nutrient delivery to the Dungeness Bay to Jamestown Shoreline, a shallow embayment with limited tidal flushing. Ulvoid mats may be replacing critical eelgrass habitat in this bay. See the Dungeness Bay: Eelgrass to Ulva Assessment Project. This is a collaborative project with the Dungeness Clean Water Workgroup and others to develop an assessment that investigates the impact of nutrients on Ulvoid growth and eelgrass habitat. The project is a priority NOBLE nearshore project.</p>
<p>PA Harbor A-Frame Removal</p>	<p>This project addresses estuarine processes of contaminants in the nearshore, sediment processes disruption, , and riparian restoration. It includes piling removal, riprap and debris removal, placement of beach material revegetating via includes the removal of 420 piles and restores 550 linear of shoreline of Ediz Hook in Port Angeles Harbor. The site in proximity to sandlance spawning beach and eelgrass beds. It is immediately adjacent to 1800 feet of shoreline restored two years ago. The site is within the critical recovery area for Puget Sound Chinook, Hood Canal Eastern Strait of Juan de Fuca Summer Chum, and Bull Trout. It is a listed priority in the NOBLE nearshore strategy.</p>
<p>Graysmarsh/Gierin Creek Protection</p>	<p>This project addresses critical estuarine processes. Via fee simple acquire conservation easements this project maintains the integrity of Graysmarsh, which functions as an important salmonid rearing area, maintains potential to restore the area to tidal saltmarsh. Specifically it protects approximately 138 acres of salt marsh and estuarine tidal channels. Salt marsh is approximately 3.5 miles from mouth of Dungeness River, approximately 8.5 miles from Jimmycomelately Creek, and approximately 5 miles from Washington Harbor. It is a top priority action project in the Dungeness recovery chapter of the Puget Sound Recovery plan, and is a priority NOBLE nearshore project.</p>
<p>Elwha River Estuary Restoration</p>	<p>This project addresses nearshore processes of estuarine and nearshore physical and biological connectivity. Estuary restoration via dike modification listed as a priority in the Regional Puget Sound Recovery Plan as well as the Elwha watershed chapter. It is a priority project in the NOBLE nearshore strategy. It includes the development of a conservation easement with a long term goal of restoring</p>

Elwha River Estuary Restoration Continued	approximately 8.5 acres of estuarine habitat on the west side of the river mouth and (very roughly) 52 acres of estuary/floodplain on the east side of the river mouth. The easement that will in the long term result in removal/setback of various channel restrictions, including the 500' Place Road dike on the west side of the estuary. Dam removal alone will not restore the lower river ecosystem. Restoration actions, being developed by the Lower Elwha Tribe and partners, in the lower part of the river The timeline for dam removals makes this project a high priority.
Sequim Bay Bulkhead Removal	This project addresses nearshore processes including sediment processes and fish migration. It is a recommended action in the Regional and Dungeness Chapters of the Puget Sound recovery plan. The bulkhead removal is just north of John Wayne Marina in Sequim Bay
Crescent Bay/Agate Beach Conservation Easement	This project addresses nearshore processes. It protects approximately 1.4 miles of high functioning critical juvenile salmonid migratory corridor including eelgrass and kelp beds intact sandy beaches Protection of nearshore habitat is via acquisition/easement The project is a top priority in the NOBLE nearshore strategy.. The project is just west of the current ESU for Puget Sound chinook boundary.
Salt Creek Salt Marsh Reconnection	<p>Juvenile chinook have been found in the Crescent Bay/Salt Creek nearshore. The landowners are not willing participants at this time-this project provides the groundwork for promoting successful future dialog.</p> <p>This project addresses nearshore/estuarine processes of connectivity for sediment and hydrologic processes and fish passage. It is a priority project in the NOBLE nearshore. Chinook have been documented in this estuary, making the project a top priority for WRIA 19 nearshore restoration projects. This project restores the hydrologic connection for almost 100 acres of estuary in the tidal-influenced reaches of Salt Creek that are currently disconnected by a dike/road. The project is a priority NOBLE nearshore project.</p>
Pit Ship Point Migration Corridor Restoration	This project addresses nearshore processes, of estuarine connectivity and fish passage, a limiting priority factor within the Dungeness recovery area. Assess options and restore the health of the migration corridor along the John Wayne Marina breakwater on the north side of Johnson Creek. Restores approximately 1500 feet of shallow water migration corridor for juvenile salmonids leaving Jimmy come lately Creek.

<p><b>Non-Capital Needs</b></p>	
<p>WRIA 18-19 Water Quality Assessment</p>	<p>This project addresses nearshore processes of water quality, a critical limiting factor nearshore water quality and in particular non-point pollution are noted as primary limiting factors in the Puget Sound Recovery plan, NOBLE, Elwha and Dungeness Recovery plans. This project implements nearshore water quality monitoring outlined in WRIA 19 water quality monitoring strategy for Elwha and western Strait nearshore and provides detailed information on linkages between water quality parameters and estuary and nearshore function for recovery of salmon including Puget Sound Chinook, Hood Canal/Eastern Strait of Juan de Fuca summer chum, and bull trout, as well as non-listed species of Chinook and Chum. The project is a s a priority NOBLE nearshore project.</p>
<p>WRIA 17-20 Fish Use Assessment</p>	<p>This project is a basic nearshore fish use assessment that has been identified as a top priority in the Recovery plan for Puget Sound, both regional and watershed chapters as well as in the NOBLE nearshore strategy and Elwha nearshore restoration strategy. It provides the Strait portion of a cross regional assessment, a top priority by researchers in the Pacific Estuarine Research Society 2004 special session entitled 'Salmon in the Nearshore-What Do We Know and Where Do We Go'. It addresses profound data gaps in our understanding of fish use along the Olympic Peninsula that have persisted for far too long. When answered will give a much more meaningful delineation of the extent, and associated geographic boundary, of nearshore use by listed fish along the western Strait. This use is indicated by small scale projects-larger scale efforts are needed to definitively address this use. It provides baseline fish use information that will be partnered with mapping of current and historic sediment trajectory to define future conditions and predicted fish use associated with large scale recovery including the removals of Elwha and Glines canyon. The project s a priority NOBLE nearshore project.</p>
<p>Genetic Stock Identification</p>	<p>This non-capital study proposes to characterize the genetic make-up of SJF coho, chum, chinook, pink salmon and steelhead stocks using DNA microsatellite analysis. A fundamental tenet of modern fisheries management is an understanding of the relationship of the genetic relationship of salmon between and within watersheds. In the SJF region, there is very little available genetic data, mostly older GSI studies, focused on Elwha and Dungeness chinook and pink salmon populations. In this study non-lethal fin clips would be collected from populations from the major watershed (ie for chum @ Dungeness, Elwha, Lyre,</p>

<p>Genetic Stock Identification Continued</p>	<p>Deep, Pysht and Hoko River) to assess genetic relationships. This data is critical for rebuilding weak stocks as the genetic relationship can determine the appropriateness of stock transfers between river. The data will also help determine if deleterious effects have been realized from past hatchery programs.</p>
<p>Dungeness Bay Water Quality Assessment</p>	<p>This project addresses a critical nearshore/estuarine process (water quality) and limiting factor, non-point pollution, identified in the Puget Sound Recovery plan and associated Dungeness recovery plan. It investigate the causes of and solutions to the water quality issues of the area, and identify strategies for protection and restoration. Develop restoration and protection strategies for 3 streams and their associated estuarine habitats, educate landowners on stewardship practices for protecting water quality in Dungeness Bay. This project promotes local stewardship by working with local landowners.</p>
<p>Forage Fish Surveys</p>	<p>Forage fish are documented to use lower rivers of the Strait of Juan de Fuca for spawning. Pilot studies have indicated Sooez, Deep Creek, and Elwha may support river spawning populations of smelt and eulachon respectively. This project defines fish use of these habitats and provides a platform for wise management strategies to support recovery of Puget Sound chinook, Hood Canal/Eastern Strait of Juan de Fuca summer chum. The project includes, but is not limited to nearshore areas identified in the Puget Sound Recovery plan and Elwha chapters. It also addresses WRIA 19 lower rivers. The project is s a priority NOBLE nearshore project.</p>

## Elwha Recovery Strategy Summary

Salmon recovery in the Elwha River watershed is supported by a variety of initiatives and/or laws, including the Elwha River Ecosystem and Fisheries Restoration Act (EREFRA), endangered species recovery plan development under Shared Strategy, the Washington State Watershed Planning Act, etc. The goal of the salmon recovery strategy for the Elwha River is best captured in the language of the EREFRA: “*full restoration of the Elwha River ecosystem and native anadromous fisheries...*”.

### Ten-year objectives:

- Provide salmonid access throughout the historic range in the Elwha River watershed through removal of the Elwha and Glines Canyon dams.
- Develop an integrated nearshore recovery strategy for the north Olympic Peninsula
- Continue to restore (rehabilitate) degraded habitat in the Elwha-Morse area, and protect the best remaining habitat through conservation easement, regulatory action, and education/stewardship.
- Establish minimum instream flow requirements for salmon in the Elwha River.
- Implement monitoring and adaptive management strategy necessary to ensure recovery.
- Implement the hatchery program identified in the Elwha Fisheries Restoration Plan.

### Three-year plan:

*Habitat restoration:* The removal of the two dams on the Elwha River is scheduled to begin in 2009. This action represents the single largest recovery activity for Pacific salmon. Funding for dam removal itself has been earmarked by Congress independently from other salmon recovery activities. However, many activities found in the salmon recovery plan for the Elwha River will not be covered through dam removal funding. Specifically, actions to restore the Elwha River and Morse Creek floodplains and nearshore habitat (levee removal/modifications, other habitat restoration projects, protection of instream flows, and preservation of existing habitat) must be accomplished through other funding. In the next three years, projects identified in the Elwha Fisheries Restoration Plan, the WRIA 18 Watershed Plan, and the North Olympic Peninsula Salmon Strategy should continue to be implemented.

*Habitat protection:* Much of the population growth in Clallam County over the next 20 years will be in the eastern portion of the county. The County has a small staff and needs additional funding to write and implement regulations to protect salmonids, along with developing and enhancing collaborative stewardship efforts.

*Harvest:* The co-managers (WDFW and Tribes) have prepared and are following a Puget Sound harvest management plan that is incorporated in the ESA 4(d) permit issued by the National Marine Fisheries Service in 2005. Consistent with that plan, additional work is required to facilitate execution of the plan, fill gaps in information and verify assumptions. The Puget Sound Technical Recovery Team has identified gaps in that plan and in the harvest management component of the Elwha recovery plan that need to be addressed. These include determining a rebuilding exploitation rate to help guide harvest management planning and execution, accommodating spatial distribution and diversity in the harvest management strategy, and incorporating northern fisheries (e.g. Canadian) in limitations on harvest. Improved fisheries enforcement capability and salmon population monitoring also are needed. Work on these tasks should proceed as soon as possible to strengthen harvest management protection of Elwha Chinook. Specific tasks have been identified for implementation over the next three years.

*Hatchery:* In order to complement dam removal, a hatchery program has been identified in the Elwha Fish Restoration Plan which protects existing salmon populations in the Elwha River during dam removal, and provides for their release into the upper watershed following dam removal. Modifications to existing hatchery facilities are required before this strategy can be implemented. With dam removal scheduled for 2009, these changes are required immediately. Support for most of the required changes is expected to come through the Elwha Dam Removal project, but additional funds may be needed.

## **WRIA 18 (West) & WRIA 19 Summary**

All of the regional salmonid stocks play critical roles in the environmental, economic and cultural health of the local tribal and non-tribal communities located in WRIA 18 and WRIA 19. This area is bordered by the Elwha River west of Port Angeles, and continues westward along the Strait of Juan de Fuca to Cape Flattery. It is home to the Lower Elwha Klallam and Makah Tribes, as well as to the small, rural communities of Joyce, Neah Bay, and Clallam Bay/Seki.

The chinook stocks of WRIA 18 and WRIA 19 are in a unique position between the ESA-listed Puget Sound Chinook (which includes the Elwha stock), and the Coastal Chinook. The WRIA 19 resident Chinook stocks are currently in a limbo-land of uncertainty regarding their genetic relatedness to the Puget Sound Chinook and the Coastal Chinook ESU. This identity needs to be clarified and recovery efforts need to be expanded. Currently the only Chinook population of any size is in the Hoko River, yet Chinook were traditionally found in the Pysht, Clallam and Sekiu. There are remnant populations in all of these watersheds that need protection and rebuilding.

Regional Coho can be tremendously productive, as can be glimpsed by reviewing the 2000 escapement values. These stocks must be protected and encouraged to flourish at their full potential. Steelhead on the Olympic Peninsula are considered “some of the world’s finest fishing”, and yet declining numbers have led to the WDFW to impose a “wild steelhead moratorium” on many of the local watersheds. These fish are vital to the local economy and sports fishermen everywhere.

Chum Salmon are presently found in very low numbers in most of the watersheds and deserve to be listed as critical or depressed under SaSI. They are considered a priority stock because they form the basis of the food chain and have the potential to contribute the most in biomass, as well as to provide natural habitat maintenance and engineering when spawning numbers reach sufficient levels, benefiting not only themselves but other salmonid stocks sharing the watershed.

Habitat in this region is also unique. Watersheds tend to be smaller and, while they are not snow-fed, still demonstrate a high degree of flashiness due to the rainfall profiles. While population density in this region is relatively low, there are major habitat impacts from land use, primarily forest practices. Riparian health is critical to watershed processes and salmonid stock health and productivity.

Habitat protection and restoration have the potential for huge impacts on salmonid recovery, where even small changes in productivity can tip the scales between restoration or decline of a stock. Upland conditions, in particular sediment generation and transport, also impact the nearshore area, which is vital not only to local stocks but to migrating Puget Sound stocks and the and forage fish they depend on as they transit between inland spawning and rearing areas and open ocean feeding grounds.

While various recovery projects have been completed or are currently underway, this region would also benefit from development of an overall recovery plan to guide sequencing of restoration activities for maximum effectiveness.

Three-Year Watershed Implementation Priorities for WRIA 18 (Elwha-Morse)

Priority Tier	Action	Likely sponsor	Project or program ?	Project/ program status	Total cost of first three years	Proposed SFRB (or grant) share	Local share or other funding	Source of other funds	2007		2008		2009		Likely end date	Additional funds needed after 2009
									Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost		
<b>Capital projects and programs</b>																
Tier 1	Morse Creek (RM 3.0-4.5) LWD Restoration	Elwha Tribe & NOSC	Project	developing	\$250,000	\$230,000	\$20,000	staff support, LWD donations	LWD purchase and Placement	\$125,000	LWD purchase and Placement	\$125,000		\$0	2008	0
Tier 1	Morse Creek Re-meander (WDFW Property)	Elwha Tribe, WDFW & NOSC	Project	developing	\$950,000	\$900,000	\$50,000	staff support, wood, reveg	Channel Excavation and Preparation	\$500,000	LWD purchase and ELJ installation	\$300,000	Riparian Planting & Monitoring	\$150,000	2009	?
Tier 1	Elwha ELJ	Elwha Tribe	Project	continuing	\$850,000	\$800,000	\$50,000	staff support, wood, reveg	LWD purchase and Placement	\$350,000	LWD purchase and Placement	\$250,000	LWD purchase and ELJ Installation	\$250,000	2009	0
Tier 1	Little River LWD Restoration	Elwha Tribe	Project	developing	\$300,000	\$290,000	\$10,000	staff support			LWD purchase and Placement	\$150,000	LWD purchase and ELJ Installation	\$150,000	2009	0
Tier 3	Ennis Creek Culvert Replacement (RM 0.5)	City of Port Angeles	Project	developing	\$335,000	\$300,000	\$35,000	staff support & Engineering	Engineering & Design	\$35,000	Purchase Bridge and Install	\$300,000		\$0	2008	0
Tier 2	Salt Creek Habitat Protection	North Olympic Land Trust	Program	Developing	\$1,500,000	\$1,200,000	\$300,000	staff support	Contact landowners, title reports, surveys, appraisals	\$80,000	Negotiate and draft conservation easements	\$80,000	Purchase development rights	\$1,340,000	Nov-09	none
Tier 1	Morse Creek Acquisition (ottonwood Ln Property)	Elwha Tribe, WDFW & NOSC	Acquisition	ready to go	\$250,000	\$240,000	\$10,000	staff support,		\$250,000	land purchase and incidentals					
<b>Total capital need</b>					<b>\$2,685,000</b>	<b>\$2,520,000</b>	<b>\$165,000</b>		<b>Total year 1 need</b>	<b>\$1,010,000</b>	<b>Total year 2 need</b>	<b>\$1,125,000</b>	<b>Total year 3 need</b>	<b>\$550,000</b>		
<b>Non-capital needs</b>																
Tier 1	Ennis Creek Estuary Restoration	Elwha Tribe, WDFW & NOSC	Program	developing	\$100,000	\$100,000	\$0		Engineering & Design	\$100,000					?	?
Tier 1	Stewardship of Morse Creek WDFW Habitat Ownership	WDFW, NOSC	Program	Ongoing need	\$51,600	\$51,600	In Kind	WCC, WDFW staff	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	Ongoing	\$8,600 annually
Tier 1	Stewardship of Elwha River WDFW Habitat Ownership	WDFW, NOSC	Program	Ongoing need	\$51,600	\$51,600	In Kind	WCC, WDFW staff	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	Ongoing	\$8,600 annually
<b>Total non-capital need</b>					<b>\$100,000</b>	<b>\$100,000</b>	<b>\$0</b>		<b>Total year 1 need</b>	<b>\$100,000</b>	<b>Total year 2 need</b>	<b>\$0</b>	<b>Total year 3 need</b>	<b>\$0</b>		

# Project Narratives- WRIA 18 Elwha-Morse

PROJECT	NARRATIVE
<p>Morse Creek RM (3.0-4.5) LWD Restoration</p>	<p>This project involves the addition of LWD to the upper portion anadromous accessible habitat in Morse Creek. This reach includes canyon bound sections of the system below the cascades at river mile 4.7. This reach contains the best existing habitat in Morse Creek and supports the majority of spawning for critically low populations such as pink salmon. This reach was historically impacted by poor logging practices and is extremely deficient in LWD. LWD is critical in Morse Creek as it provides necessary channel roughness to trap gravel for spawning habitat. Because of access limitations, this project will use a Helicopter to place key pieces of LWD in the project reach.</p> <p>Morse Creek is a tier 1 watershed identified within the NOPLEG strategy. Restoration of LWD levels downstream of the cascades has been identified as a limiting factor and important restoration priority for WRIA 18. Morse Creek supports populations of coho, chum, pink and steelhead. These populations are at a critically low level. A population of spring chinook salmon has been extirpated from Morse Creek.</p>
<p>Morse Creek Remeander (WDFW Property) Reconstruction &amp; LWD Project RM</p>	<p>Channel restoration of over 1500 feet of straightened and diked reach of the mainstem of Morse Creek will radically improve habitat availability for all species of salmonids adding channel length, floodplain connectivity, LWD structures and spawning and rearing habitat. WDFW purchased 130 acres across this reach with the intent of channel reconstruction in 2002. The project is based on the preliminary scope defined in the initial Engineering Feasibility study in progress (06).</p> <p>Morse Creek, a Tier 1 watershed, historically had relatively high productivity and supported significant runs of Chinook, coho, pink, chum and steelhead. It is likely bull trout habitat. The stream still provides important spawning and rearing habitat for coho, pink and steelhead. It is identified in the Elwha River Restoration Plan as the refugia watershed for Elwha Chinook stock to rear during dam deconstruction. Habitat improvements prior to dam removal will make Morse Creek more viable for Chinook refugia. A recovery plan for the extirpated Morse Creek Chinook is likely to follow Elwha dam removal. This is one of several habitat restoration activities already identified as crucial to reintroduction of Chinook in the system.</p>

<p>Elwha River Engineered Logjam Project</p>	<p>This project is designed to restore floodplain habitats in the lower Elwha River (below Elwha Dam) through the construction of engineered logjams (ELJ). ELJ's simulate the architecture of naturally occurring logjams on large rivers and can provide important habitat features. New research has shown that ELJ's are stable in large rivers and may positively affect primary and secondary production as well as juvenile and adult fish. The Elwha Tribe has constructed 22 such logjams in the Elwha River since 2000 in an effort to restructure the lower river with LWD prior to dam removal. The proposed project would allow the construction of an additional 20-25 ELJ's in the lower river prior to dam removal (scheduled in 2009-2011).</p> <p>Removal of two mainstem hydroelectric dams as authorized under the Elwha Act will provide access to over 90 miles of the Elwha River and its tributaries. Restoration of the Elwha River is one of the largest restoration projects in the Pacific Northwest. Restructuring of the lower river with LWD has been identified as a necessary action in the Puget Sound Chinook Recovery Plan, the Elwha Fish Restoration Plan and the NOPLEG strategy.</p>
<p>Little River LWD Restoration</p>	
<p>Ennis Creek Culvert Replacement (RM 0.5)</p>	<p>The city of Port Angeles has an access road to its municipal sewage treatment plant. The road crosses Ennis Creek at RM 0.5. The existing culverts are undersized and represent a blockage to fish migration. This project would replace the existing culverts with either a concrete or pre-fabricated steel bridge.</p> <p>Although Ennis Creek is currently ranked as a tier 3 stream in the NOPLEG strategy, its historical importance and potential is recognized locally. The headwaters of Ennis Creek drain Mt. Angeles in Olympic National Park. Ennis Creek has a snowmelt hydrology and supports populations of coho salmon, steelhead, and cutthroat and bull trout. Although the lower portions of Ennis Creek have been degraded by urbanization and channelization, the majority of the stream is protected by a steep, forested ravine. Significant restoration is planned around the estuary (associated with the Rayonier Mill clean-up) and some restoration has already occurred in the watershed</p>

<p>Elwha, Little River &amp; Indian Creek Protection</p>	<p>This proposed program will make protection of the riparian corridor contiguous by targeting private lands on the Elwha River for conservation easements. Approximately 200 acres will be targeted from the mouth of the Elwha River to Olympic National Park. The targeted area for riparian conservation easements also includes tributaries that were historically anadromous, specifically the Little River and Indian Creek.</p> <p>Protecting these tributaries will further protect the best existing functional habitat for Chinook and other stocks once dam removal is complete. The Elwha River contains ESA listed Elwha Chinook and multiple priority stocks.</p> <p>The Elwha is designated Tier 1 according to prioritized watersheds in the NOPL strategy and the program goals fit under the NOPL priority action to protect the best habitat for multiple priority stocks. The program also follows actions outlined in Elwha Watershed Recovery Planning Efforts, to protect the best existing functional habitat in the lower river.</p>
<p>Morse Creek Habitat Protection</p>	<p>Approximately 100 acres of the best existing functional riparian habitat will be protected in the lower 4 miles of Morse Creek, the largest of the independent drainages to salt water between the Dungeness and Elwha rivers, entering the Strait of Juan de Fuca approximately 2 miles east of Port Angeles. Fish species include spring/summer chinook, coho, chum, pink salmon, summer/winter steelhead, and searun cutthroat trout.</p> <p>According to the NOPL strategy, Morse Creek is designated Tier 1 and the Morse Creek Habitat Protection program goals fit under the NOPL priority action to protect the best habitat for multiple priority stocks. The program also follows recommendations established by the WRIA 18 Watershed Plan for Morse Creek, to restore and protect natural stream banks, including natural riparian vegetation.</p>
<p>Morse Creek - Acquisition of Cottonwood Lane Property</p>	<p>Willing sellers of these floodplain properties are ready to proceed as soon as additional acquisition funding is available. Acquisition of these parcels is crucial to the design of the Morse Creek channel meander construction project above. WDFW will hold the property after the acquisition and demolition is complete.</p>

<p>Morse Creek – Acquisition of Cottonwood Lane Property</p>	<p>Morse Creek, runs through a low lying residential community in the lower section. Final purchases of the remaining 2 residences on Cottonwood Lane will allow for floodplain functions to resume on WDFW property without impacting the rest of the upstream residential community. Morse Creek is a tier 1 watershed identified within the NOPLEG strategy. Restoration of LWD levels is an important restoration priority for WRIA 18 as well as the channel meander. This acquisition allows for restoration activities while protecting floodplain access.</p>
<p>Morse Creek - Strait View Drive Properties</p>	<p>For sale signs have appeared on vacant parcels adjunct to and including the floodplain of Tier 1 Morse Creek in the constricted area just north of the Railroad / Centennial Trail Bridge. Permanent protection of these parcels will eliminate the future conflicts between natural river functions and expanding human encroachment in the lower mainstem (RM .8). Protection is the first step in recovery actions for Morse Creek. These parcels contain intact riparian forest canopy.</p> <p>The Parcels are adjacent to the WDFW property on Morse Creek. The stream is constrained by residential development downstream of the WDFW property. Protecting the few remaining undeveloped parcels from inappropriate development will help provide floodplain corridor protection for the stream. This project will provide access to future LWD projects as well as, allowing for additional conifer planting.</p>
<p><b>Non-Capital Project Narratives</b></p>	
<p>Ennis Creek Estuary Restoration</p>	<p>The City of Port Angeles has an access road to its municipal sewage treatment plant. The road crosses Ennis Creek at RM 0.5. The existing culverts are undersized and represent a blockage to fish migration. This project would replace the existing culverts with either a concrete or pre-fabricated steel bridge.</p> <p>Although Ennis Creek is currently ranked as a Tier 3 stream in the NOPLS Strategy, its historical importance and potential is recognized locally. The headwaters of Ennis Creek drain Mt. Angeles in Olympic National Park. Ennis Creek has a snow melt hydrology and supports populations of coho salmon, steelhead, and cutthroat and bull trout. Although the lower portions of Ennis Creek have been degraded by urbanization and channelization, the majority of the stream is protected by a steep, forested ravine. Significant restoration is planned around the estuary (associated with the Rayonier Mill clean-up) and some restoration has already occurred in the watershed.</p>

<p>Stewardship of Morse Creek WDFW Habitat Ownership</p>	<p>WDFW purchased 133 acres in a vital section of the Morse Creek watershed. This area is the target location for a major Riverine Restoration Project, where habitat will be improved by returning natural riverine ecosystem and floodplain functions. NOSC has successfully secured SRFB funding for the Restoration Project Feasibility Study. NOSC has been active at initiating a Fish &amp; Wildlife Habitat Interpretive Center on the WDFW ownership to provide a learning center for the public to understand the watershed management and restoration needs.</p> <p>This conservation pursuit was accomplished during a time when WDFW's budget for management of their ownership has continued to drop. This has resulted in added WDFW lands with an ongoing reduction of funding available for stewardship of these habitats. The increased focus of this site by the public will make the stewardship neglect more of a risk to the natural resources. Monitoring and directing the use of the site by the public to assure they do not impact the fish resources is essential. Ongoing noxious weed removal will be necessary at this site, which will require staff to coordinate WCC and volunteer crews.</p>
<p>Stewardship of Elwha River WDFW Habitat Ownership</p>	<p>WDFW purchased 90 acres of the Lower Elwha Floodplain, just south of the Elwha Tribal Reservation. This area was acquired with IAC funds to provide public pedestrian use of the Elwha River and to conserve the undeveloped land. WDFW has not actively managed this habitat area since the acquisitions that began in 1961. The site has a significant Scotch Broom infestation.</p> <p>With the major restoration of the entire Elwha River system in action, this crucial lower floodplain should be managed for removal of noxious weeds prior to and after the dams are removed. Monitoring and directing the use of the site by the public to assure they do not impact the fish resources is essential.</p>

Three-Year Watershed Implementation Priorities for WRIA 19 (Lyre-Hoko)

Priority Tier	Action	Likely sponsor	Project or program?	Project/ program status	Total cost of first three years	Proposed SRFB (or grant) share	Local share or other funding	Source of other funds	2007		2008		Year 3 Scope
									Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	
<b>Capital projects and programs</b>													
Tier 1	Hoko LWD restoration- Herman Creek	Makah	Project	Developing	\$250,000	\$190,000	\$60,000	staff support, LWD donations	LWD purchase and ELJ installation	\$250,000			
Tier 1	Hoko LWD restoration- Emerson Flats	Makah	Project	Developing	\$700,000	\$650,000	\$50,000	staff support, wood, reveg	LWD purchase and ELJ installation	\$400,000	LWD purchase and ELJ installation	\$300,000	
Tier 1	Hoko LWD restoration- mainstem at RM 6	Makah	Project	Developing	\$300,000	\$250,000	\$50,000	staff support, wood, reveg					LWD purchas: installation
Tier 1	Riparian revegetation Hoko mainstem RM 1-7	Makah	project	Developing	\$255,000	\$245,000	\$10,000	staff support	order trees, identify areas	\$5,000	plant trees	\$150,000	Maintenance
Tier 1	Little Hoko River LWD restoration- RM 0-4	Elwha	Project	Continuing	\$165,000	\$155,000	\$10,000	staff support USFS	LWD Purchase and Mobilization	\$40,000	LWD Purchase and Mobilization	\$40,000	Contract Coli Helicopter to
Tier 2	FS Road Stabilization	NOSC/Elwha	Project	Developing	\$460,000	\$400,000	\$60,000	Staffing USFS	Design, Award, Implement	\$460,000		\$0	
Tier 2	FS Road Stabilization	NOSC/Elwha	Project	Developing	\$285,000	\$250,000	\$35,000	Staffing USFS		\$0	Design & Implement	\$285,000	
Tier 2	Sekiu LWD restoration- mainstem RM 2-5	Makah	Project	Developing	\$400,000	\$350,000	\$50,000	staff support, wood, reveg			LWD purchase and ELJ installation	\$300,000	Maintenance
Tier 2	Clallam LWD restoration- mainstem (RM 5-10)	Elwha	Project	Developing	\$600,000	\$550,000	\$50,000	staff support, wood, reveg			LWD purchase and ELJ installation	\$300,000	LWD purchas: installation
Tier 2	Riparian reveg Sekiu, Clallam, Pysht	Makah, Elwha	project	Developing	\$255,000	\$245,000	\$10,000	staff support	order trees, identify areas	\$5,000	plant trees	\$250,000	
Tier 2	Pysht Mainstem LWD Restoration (RM 4.5-5)	Elwha	project	Developing	\$250,000	\$200,000	\$50,000	staff support, LWD	Plan engineering, development, permitting	50,000	LWD Purchase and Mobilization	100,000	LWD/ELJ Ins
Tier 2	Salt Creek Culvert Corrections	Elwha, Clallam	project	Developing	\$837,230	\$787,230	\$50,000	staff support	Plan engineering, development, permitting	50,000	Implementation	393,615	Implementai
Tier 2	Salt Creek Habitat Protection	N. Olympic Land Trust	Program	Developing	\$1,500,000	\$300,000	\$1,200,000	Staff Support	Contact landowners, title repts, surveys & appraisal	80,000	Negot. & Draft Conser. Easements	80,000	Purchase De
<b>Total capital need</b>					<b>\$4,757,230</b>	<b>\$4,272,230</b>	<b>\$1,685,000</b>		<b>Total year 1 need</b>	<b>\$1,340,000</b>	<b>Total year 2 need</b>	<b>\$2,198,615</b>	<b>Total y</b>
<b>Non-capital needs</b>													
Tier 1	Development of Regional Recovery Plan for WRIA 19	Lead entity	Program	Ongoing need	\$240,000	\$240,000	\$0		Staffing (1 FTE)	\$80,000	Staffing (1 FTE)	\$80,000	Staffing (1 F
Tier 1	Monitor sediment & turbidity issues	Makah	Program	Ongoing need	\$195,000	\$145,000	\$50,000	equipment support	Staffing (1 FTE)	\$65,000	Staffing (1 FTE)	\$65,000	Staffing (1 F
Tier 2	Assmt of Clallam River Mouth geomorphology	Makah, Elwha, WDFW, Clallam county	project	Assessment	\$200,000	\$200,000			design and initiate study with UW or OSU team of coastal/fluvial geomorphologists	\$100,000	complete study	\$100,000	
Tier 1	Investigation of off-channel water storage options for Hoko River	Makah, Clallam PUD, Elwha	Project	Assessment	\$100,000	\$100,000		Clallam PUD					develop alter off-chanel w: storage for Clallam/Seki supply
Tier 1	Pysht River Estuary Restoration Planning	Elwha, Merrill and Ring, WDFW	Project	Assessment	\$200,000	\$200,000		Cascade Conservancy ?	design and initiate study with multi-disciplinary team	\$100,000	complete study/restoration plan	\$100,000	
Tier 2						\$0							
Tier 3													
<b>Total non-capital need</b>					<b>\$935,000</b>	<b>\$885,000</b>	<b>\$50,000</b>		<b>Total year 1 need</b>	<b>\$345,000</b>	<b>Total year 2 need</b>	<b>\$345,000</b>	<b>Total y</b>
<b>Priority projects and programs benefitting non-listed species</b>													
Tier 3	Culvert replacements on Sall River	Makah	Project	Developing	\$400,000	\$400,000					replace culverts for fish passage	\$400,000	
Tier 1													
Tier 2													
Tier 3													
<b>Total non-capital need</b>					<b>\$400,000</b>	<b>\$400,000</b>	<b>\$0</b>		<b>Total year 1 need</b>	<b>\$0</b>	<b>Total year 2 need</b>	<b>\$400,000</b>	<b>Total y</b>

# Project Narratives – WRIA 19

PROJECT	NARRATIVE
<p>Hoko LWD Restoration Herman Creek</p>	<p>This project will restore spawning and rearing habitat to Herman Creek, a Tributary to the Hoko River and known chinook habitat. Adding LWD to this tributary 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. The NOPL strategy lists the Hoko watershed as Tier 1 priority, and Chinook as Tier 1 species. This project will also benefit coho, steelhead and cutthroat.</p>
<p>Hoko LWD Restoration- Emerson Flats</p>	<p>This project will restore spawning and rearing habitat in the Hoko Mainstem, approximately RM 6 , which is known chinook habitat. 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. The NOPL strategy lists the Hoko watershed as Tier 1 priority, and Chinook as Tier 1 species. This project will also benefit coho, chum, steelhead and cutthroat.</p>
<p>Riparian Revegetation Hoko Mainstem RM 1-7</p>	<p>This project will restore the riparian zone along the independent tributaries to the Straits of Juan de Fuca. All of these rivers are known chinook habitat, although current populations are much depressed. Revegetation of riparian zones will reduce sediment impacts, improve water quality, and restore CMZ 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. The NOPL strategy lists the these watersheds as Tier 2 priority, and Chinook as Tier 1 species. This project will also benefit 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>
<p>Little Hoko River LWD Restoration RM 0-4</p>	<p>The Little Hoko River is the largest tributary to the Hoko River and is a tier 1 watershed that supports chinook, coho, chum, steelhead and cutthroat trout. The lower portions of the Little Hoko River have been purchased by the Washington Department of Parks and Recreations for a future state park. Between 1994-1998 extensive restoration was conducted on the Little Hoko River. Fencing, riparian planting, additions of LWD, creation of off-channel habitat and road abandonment was completed using state and federal funding. A long term monitoring plan was also initiated and is ongoing.</p> <p>In an analysis of monitoring data from the restoration effort to date (McHenry et al.) have shown that the project has positively affected stream and riparian habitats of the Little Hoko River. While some fish populations have</p>

<p>Little Hoko River LWD Restoration RM 0-4</p>	<p>improved, suggesting a positive effect, it is still not possible statistically to separate these changes from those associated with marine survival. This proposal involves the placement of 150 key pieces of LWD using a helicopter throughout the anadromous reaches of the system. This project is needed because much of the LWD used in the early restoration effort was small (mostly cut logs) and skewed toward the lower reaches of the river. Placement of key pieces would be effective at trapping smaller LWD currently being recruited from young riparian stands.</p>
<p>FS 3040 Road Stabilization Project</p>	<p>The Forest Service is proposing to stabilize, improve drainage and upgrade 7.2 miles of the Forest Service Road (FSR) 3040, thereby reducing sedimentation into the East Twin River. The East Twin River is part of the Intensively Monitored Watershed program. The 3040 road is owned and maintained by the Olympic National Forest. Bonneville Power Administration transmission lines and a Homeland Security communications site are accessed by the FSR 3040.</p> <p>The projects short term goal would be the reduction or elimination of risk factors that contribute to road failures. A long term goal is to return sediment supply to more natural, pre-disturbance levels. For the East Twin River excessive sedimentation (from roads) was identified as a major limiting factor for aquatic habitat in the watershed (NOPLEG Strategy, Smith (2000) and Deep-Twins Watershed Analysis (USDA, 2002)). The roads have had engineering surveys, but lack funding for implementation.</p>
<p>FS 3067 Road Stabilization Project</p>	<p>The Forest Service is proposing to stabilize, improve drainage and upgrade 3.0 miles of FSR 3067, thereby reducing sedimentation into Deep Creek. Deep Creek is part of the Intensively Monitored Watershed program. The roads are owned and maintained by the Olympic National Forest. A Homeland Security communications site is accessed by the FSR 3067.</p> <p>The projects short term goal would be the reduction or elimination of risk factors that contribute to road failures. A long term goal is to return sediment supply to more natural, pre-disturbance levels. For Deep Creek excessive sedimentation (from roads) was identified as a major limiting factor for aquatic habitat in the watershed (NOPLEG Strategy, Smith (2000) and Deep-Twins Watershed Analysis (USDA, 2002)). The roads have had engineering surveys, but lack funding for implementation.</p>
<p>Sekiu LWD Restoration- Mainstem RM 2-5</p>	<p>In an analysis of monitoring data from the restoration effort to date (McHenry et al.) have shown that the project has positively affected stream and riparian habitats of the Little Hoko River. While some fish populations have improved, suggesting a positive effect, it is still not possible statistically to separate these changes from those associated with marine</p>

<p>Sekiu LWD Restoration- Mainstem RM 2-5</p>	<p>survival. This proposal involves the placement of 150 key pieces of LWD using a helicopter throughout the anadromous reaches of the system. This project is needed because much of the LWD used in the early restoration effort was small (mostly cut logs) and skewed toward the lower reaches of the river. Placement of key pieces would be effective at trapping smaller LWD currently being recruited from young riparian stands.</p> <p>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, Chinook frequently hold in large deep pools. It will also assist in gravel bed creation and maintenance. This watershed has been severely impacted by logging and road impacts. The current chinook population is very low and habitat needs to be improved to facilitate recovery of this traditional Chinook population. The NOPLE strategy lists the Sekiu watershed as Tier 2 priority, and Chinook as Tier 1 species. This project will also benefit 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>
<p>Clallam LWD Restoration- Mainstem RM 5-10</p>	<p>The Clallam River is a Tier 2 drainage in western WRIA 19. The watershed includes primarily forested lands, in particular a large block of state land (Clallam Block). This project includes the addition of LWD to a 5 mile reach of state owned lands that includes significant spawning and rearing habitat for coho salmon, steelhead and cutthroat trout. Additions of LWD would include primarily free key pieces using a helicopter. Combined with improving riparian conditions its is anticipated that this project would greatly speed the rate of habitat formation in the basin.</p> <p>This project has been identified as high priorities in both the Clallam Landscape Management Plan and the NOPLEG strategy.</p>
<p>Riparian Revegetation Sekiu, Clallam, Pysht</p>	<p>This project will restore the riparian zone along the independent tributaries to the Straits of Juan de Fuca. All of these rivers are known chinook habitat, although current populations are much depressed. Revegetation of riparian zones will reduce sediment impacts, improve water quality, and restore CMZ 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. The NOPLE strategy lists these watersheds as Tier 2 priority, and Chinook as Tier 1 species. This project will also benefit 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>





<p>Monitor Sediment &amp; Turbidity Issues</p>	<p>Monitoring sediment and turbidity trends in the Hoko and Sekiu watersheds will provide information on current habitat conditions, the impacts of industrial forestry, and the effectiveness of restoration efforts. The Hoko is a Tier 1 watershed. The Sekiu is Tier 2. Both of these watersheds are utilized by Fall Chinook, a tier 1 species, as well as coho, chum, steelhead and cutthroat. Processes in these watersheds in producing and transporting sediment also impacts estuarine and nearshore rearing and migration areas.</p>
<p>Assessment of Clallam River Mouth Geomorphology</p>	<p>It is unclear whether the Clallam River was historically bar-bound, however, the flow regime has changed and closure is interfering with chinook and chum leaving, and coho and chum runs. The integrity of the Clallam headwaters is among the best of the WRIA 19 streams, but the lower flood plains is one of the worst.</p> <p>Processes and restoration strategies outlined in NOBLE nearshore strategy, which is included in the watershed recovery chapter submittal of June, 2005: Priority limiting factors are: Shoreline armoring and alteration; lower river alterations; upland management practices including increased fluvial sediment supply; in and overwater structures</p> <p>Priority Actions to Restore Process are: Restore nearshore and riverine sediment processes, and water quality, including lower river hydrodynamics, shoreline alterations, and the effects on tidal marshes and kelp beds, with prior assessments where necessary. Geomorphological assessment will provide information to develop projects that will lead to restoration.</p>
<p>Investigation of off-channel water storage options for Hoko River</p>	<p>Community Water supplies are becoming more critical issues with the growing population in the West End. The Hoko River is a natural target for this interest, but care must be taken in how water management is implemented. The Hoko is a Tier 1 watershed. The Sekiu is Tier 2. Both of these watersheds are utilized by Fall Chinook, a Tier 1 species, as well as coho, chum, steelhead and cutthroat. Flows in the Hoko are critical to habitat and fish health and human impacts must be carefully planned and minimized during critical periods. A broad-based assessment of options in planning for human needs is needed before any implementation can occur.</p>
<p>Pysht River Estuary Restoration Planning</p>	<p>The Pysht River estuary is one of the largest, relatively intact estuaries in the Strait of Juan de Fuca. The estuary contains kelp, eelgrass, salt marsh and forested wetland habitats that support significant fish populations including chum, Chinook, coho, steelhead, cutthroat, and marine forage fishes. The estuary may also support chinook salmon from other drainages</p>

<p>Pysht River Estuary Restoration Planning Continued</p>	<p>including the Puget Sound Chinook ESU. This non-capital project proposes to develop a detailed restoration plan for the estuary. The Pysht River estuary was partially assessed in the recently completed watershed analysis. The analysis showed that historic log booming activities including dredging, road construction and shoreline armoring have disconnected significant portions of the estuary. We propose to develop a specific plan to reconnect these habitats with the estuary.</p> <p>The Pysht River estuary was recently placed in a 50 year conservation easement through an agreement between Merrill and Ring and the Cascade Conservancy. The easement controls land uses that may be detrimental to the estuary and should facilitate restoration actions.</p>
<p><b><u>Non-Capital Need</u></b></p>	
<p>Culvert Replacements on Sail River</p>	<p>Culvert Replacement on the Sail River will provide increased fish access to both spawning and rearing habitat and reduce sediment inputs to the river. The Sail River is ranked a Tier 3 watershed in the NOPL strategy, and is utilized by coho, steelhead and chinook.</p>



## Project Narratives - Non-Capital Projects Across all WRIAS

PROJECT	NARRATIVE
Develop Regional Recovery Plan for WRIA 19	<p>Develop a WRIA 19 regional recovery plan that integrates WRIA 19 conditions and needs into the overall recovery plan for the Puget Sound region.</p> <p>The recovery plan needs to be developed to bring priority and effectiveness to salmonid stock restoration and protection efforts and to facilitate integration of WRIA 19 conditions and needs into the overall recovery plan for the Puget Sound region. WRIA 19 is a complex of many smaller watersheds and very different from the large single-river drainages which make up many WRIA's. While WRIA 19 watersheds are not snow-fed, they do tend to be extremely flashy due to the rainfall profiles in the area. They have also been heavily impacted by forest practices. Riparian health is a key component to habitat processes that support salmonid populations, and the health of upland areas impacts the health of the associated estuarine zones and near shore reaches, which are used not only by local stocks but provide critical habitat and migration passages to inland Puget Sound stocks.</p>
North Olympic Peninsula Lead Entity	<p>Continue coordination of NOPLE efforts for salmonid recovery across the watershed. This was Identified in Watershed recovery submittal of June, 2005 as a recovery action.</p> <p>Efforts of NOPLE have resulted in a strategy and a prioritized list of projects for the watershed. Implementation funding through Salmon Recovery Board and others, operational funding through WDFW.</p>
Education and Outreach	<p>Build on existing local efforts to develop a comprehensive collaborative program for outreach, education, public involvement, and stewardship promotion.</p> <p>Education and outreach was Identified in Watershed recovery submittal of June, 2005 as a recovery action. Current outreach efforts are project-specific. A comprehensive, collaborative program will make most efficient use of resources to better reach a burgeoning population and to provide necessary education, opportunities for public involvement, and to encourage</p>

Education and Outreach Continued	stewardship. The need for a coordinated, collaborative outreach effort is also identified in the <i>2514 WRIA 18 Elwha/Dungeness Watershed Plan</i> (Ch. 3.7, Public Education and Outreach Recommendations).
Update Stormwater Management Program	<p>Review and update, as necessary, stormwater management program:  Stormwater management rules; clearing and grading; monitoring; education; compliance</p> <p>Updating the stormwater management program was identified in Watershed recovery submittal of June, 2005 as a recovery action. Current regulatory program is based on the 1992 Stormwater Manual for the Puget Sound Basin and other critical area protection standards. Recommended comprehensive stormwater management code update drafted in 2003. Further action pending. County has partnered with Puget Sound Action Team and Clallam Conservation District to identify updates for incorporation of Low Impact Development principles and practices into County policies, rules, and programs. Port Angeles is now partnering with the Puget Sound Action Team to do the same.</p> <p>The <i>2514 WRIA 18 Elwha/Dungeness Watershed Plan</i> also recommends a more comprehensive, collaborative stormwater management program that builds on existing local efforts “to meet state and federal laws for protection and recovery of listed species, stormwater management, and other natural resources requirements” (Ch. 3.6, Land Use and Land Management Recommendations). Staffing resources to administer stormwater programs is identified as an issue. The county and cities have a small staff and need additional funding to write and implement regulations to protect salmonids, along with developing and enhancing collaborative stewardship efforts.</p>
Update Shoreline Master Program	<p>Pursuant to Chapter 90.58 RCW and Chapter 173-26 WAC, review and update required to comply with new state requirements.</p> <p>Updating the Shoreline Master Program was Identified in Watershed recovery submittal of June, 2005 as a recovery action. The <i>2514 WRIA 18 Elwha/Dungeness Watershed Plan</i> recommends that the SMP be updated and coordinated “to meet state and federal laws for protection and recovery of listed species, stormwater management, and other natural resources requirements” (Ch. 3.6, Land Use and Land Management Recommendations). Current regulatory program was last revised in 1992. Funding needed for staff support, public process, and supporting studies.</p>

	<p>The county and cities have a small staff and need additional funding to write and implement regulations to protect salmonids, along with developing and enhancing collaborative stewardship efforts.</p>
<p>Increase Compliance of Ordinances and Codes</p>	<p>Increase code compliance through active involvement in project inspection and monitoring in all stages of development.</p> <p>Code Compliance was Identified in Watershed recovery submittal of June, 2005 as a recovery action. Current funding levels do not adequately address code compliance issues. For instance, one FTE is now assigned to code compliance/enforcement for <i>all</i> County land use regulations. Most compliance actions are limited to responding to complaints due to limited staff resources. Additional resources are needed to increase compliance through active involvement in project inspection and monitoring in all stages of development. Examples of code compliance implications to salmon recovery in the Dungeness Basin are presented in <i>A Review of Clallam County Critical Areas Ordinance in protecting Riparian Areas</i> attached to Question A of Watershed Recovery submittal of June, 2005.</p>
<p>WRIAs17, 18, 19 Watershed Plan Implementation</p>	<p>Implementation structures need to be established. WRIA 17 and WRIA 18 plans adopted; adoption of WRIA 19 plan expected in 2006. Watershed Plan Implementation was included in the Watershed recovery submittal of June, 2005 as a recovery action.</p>
<p>Co-managers General Management and Operations Support Program</p>	<p>There is a need to provide oversight and ensure follow-up management and coordination of the Chinook recovery efforts. This program funds FTEs for co-managers to perform the following activities and tasks.</p> <ul style="list-style-type: none"> <li>• Oversee hatchery and harvest recovery actions to ensure measures are executed as intended.</li> <li>• Compile and assess monitoring data and assessments and assist in preparation of technical and administrative reports. Participate in follow-up coordination and planning meetings between co-managers and with other recovery participants (e.g., lead entities, local governments, non-government organizations, communities and citizens).</li> <li>• Sponsor and/or participate in community education and public relations events.</li> <li>• Negotiate management and funding agreements.</li> <li>• Conduct research and analysis to address policy issues and participate in policy level meetings and negotiations.</li> </ul>

	<ul style="list-style-type: none"> <li>• Participate in instream flow analyses and development of agreements.</li> <li>• Work to complete a local adaptive management plan that provides for all H integration and includes region-wide coordination; also, help manage implementation of the plan.</li> <li>• Periodically participate in the reviewing and revision of the Chinook recovery plan. Participate in meetings and provide reports of recovery progress to regulatory agencies.</li> <li>• Review and comment on processes relevant to and affecting Chinook recovery, including land use management through the State's Growth Management Act and Shoreline Management Act.</li> </ul> <p>Identified in Watershed recovery submittal of June, 2005 as a recovery action. The ability of the co-managers to follow through with provisions of the Chinook recovery chapter depends upon their having the human resources to do so effectively. The above described program would provide the co-managers with these needed resources and, if implemented immediately as part of the three-year implementation plan, it would help avoid delays in carrying out actions specified in the plan and help complete the plan improvements suggested by the Puget Sound Technical Recovery Team.</p> <p>Co-managers participate in negotiations such as US-Canada agreement and others. As support is reduced elsewhere for analysis and report writing, it becomes crucial to support these activities at the watershed level. This was also Identified in Watershed recovery submittal of June, 2005 as a recovery action.</p>
<p>Create Stable-Funded Incentive Programs</p>	<p>Explore and work to establish stable funding for incentive-based habitat protection programs. As Identified in Watershed recovery submittal of June, 2005 as a recovery action.</p> <p>Current riparian habitat protection program is funded by a one-time only grant. Stable funding is crucial to the long-term habitat protection efforts in the watershed.</p>
<p>Increase Compliance of Fisheries Enforcement, Hydraulic Permits (HPA), and Additional Environmental Review</p>	<p>Harvest management calls for effective enforcement of harvest regulations and implementation of orderly fisheries. Currently fisheries are limited in the vicinity. 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. Additional officers are needed for effective enforcement of closures and to ensure orderly fisheries.</p>

	<p>This was Identified in Watershed recovery submittal of June, 2005 as a recovery action. Currently, enforcement personnel are spread thin and do not sufficiently cover enforcement needs. The addition of three 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 Chinook will continue.</p>
<p>Monitoring and Reporting Programs for Regulated Activities</p>	<p>Includes variances/ reasonable use exceptions/ exemptions/ and update of buildout presented on a map of the watershed. Review for consistency with ESA recovery goals, as recommended in <i>WRIA 18 Elwha/Dungeness Watershed Plan</i>. If implemented, becomes part of adaptive management plan. Annual report, 3-year review.</p> <p>This was also Identified in Watershed recovery submittal of June, 2005 as a recovery action. Funding is needed to monitor and report activities.</p>
<p>Marine Resources Committee</p>	<p>Base funding currently funded through NW Straits Initiative; specific project funding may be sought elsewhere.</p> <p>Having an ongoing Marine Resources Committee was Identified in Watershed recovery submittal of June, 2005 as a recovery action.</p>
<p>Intensively Monitored Watershed Study</p>	<p>Excerpted from:</p> <p>EVALUATING WATERSHED RESPONSE TO LAND MANAGEMENT AND RESTORATION ACTIONS:  INTENSIVELY MONITORED WATERSHEDS (IMW) PROGRESS REPORT  <i>Submitted to</i>  <i>Washington Salmon Recovery Funding Board</i>  July 2004  Prepared by The IMW Scientific Oversight Committee</p> <p>The complex relationships controlling salmon response to habitat conditions can best be understood by concentrating monitoring and research efforts at a few locations.</p>

	<p>Of all the watershed complexes in this statewide study, <i>the Strait of Juan de Fuca complex (East Twin River, West Twin River, Deep Creek)</i> offers the best opportunity for maintaining the integrity of control and treatment watersheds. The watersheds are almost completely owned by USFS and one private forestry company. We have the full cooperation of both organizations. Relatively little timber harvest or road construction will occur in these watersheds over the next decade. Therefore, interpreting any responses of the fish to the restoration treatments at the watershed scale will not be complicated by other activities that might affect habitat condition.</p>
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