

*Snoqualmie River · Snohomish River · Skykomish River*

# *The Snohomish River Basin*

*Building a Healthy Watershed*



**SNOHOMISH BASIN  
SALMON RECOVERY FORUM**



## **Introduction**

### **Overview of the Snohomish Basin 10-Year Conservation Plan and 3-Year Work Planning**

The *Snohomish River Basin Salmon Conservation Plan (Plan, 2005)* is a multi-salmonid strategy that emphasizes two Endangered Species Act (ESA) listed species, Chinook salmon and bull trout char, as well as non-listed coho, all of which are used as proxies for other salmonids in the Basin. The *Plan*, developed by the 41-member Snohomish Basin Salmon Recovery Forum (the Forum), incorporates actions across habitat, harvest and hatchery management to bring the listed wild stocks back to healthy, harvestable levels.

The Snohomish River Basin 3-year Work Plan update is a combination of documents that provides direction and a technical foundation for salmon recovery in the Basin. This work is outlined for the next 3 years and derives from the 10-year *Plan*. Included in the 2013 3-year Work Plan update are: a narrative, a spreadsheet containing all of the capital, programmatic, harvest and hatchery actions that outline our strategy for the next three years of the recovery process, and a map showing the locations of habitat restoration projects in the Basin.

The Puget Sound Partnership has established the following 3-Year work plan goals:

1. To provide a forum for watershed groups, the Recovery Implementation Technical Team (RITT), and Puget Sound Partnership (PSP) staff to discuss the work, status, and needs of salmon recovery in each salmon recovery watershed chapter and regionally;
2. To have a tool that documents the work, status, and needs of salmon recovery per each salmon recovery watershed chapter for the next three years that can be rolled up into a regional statement of the funding and capacity needs, current status, and existing work underway;
3. To be a tool for identifying priority projects for current and future funding opportunities;
4. To document changes in the implementation of each salmon recovery watershed chapter.

*These goals will be addressed through using the work plan to create clear linkages between Plan Strategies / benchmarks and implementation progress in order to identify priorities actions and highlight these actions on our work list.*

The Snohomish Basin uses the 3-Year Work Plan to meet these goals:

1. Run an inclusive work planning process that is representative of the diversity of work being conducted throughout the basin.
2. Utilize the work plan as a communication tool for :
  - Project and program sponsors
  - Basin staff
  - Technical and Policy Development Committees
  - The Snohomish Basin Salmon Recovery Forum

The Snohomish River Basin Three-Year Work Program identifies work planned over a three-year period to advance salmon recovery through habitat protection, restoration, hatchery operations, harvest management, and integration of multi-H activities. For 2013, the total list of projects reflects actions being taken by project sponsors throughout the basin as well as projects that could take place given different funding levels, the opportunistic nature of restoration, and recommendations from the *Plan*. The project list is largely self-selected by project sponsors, based on guidance from the *Plan* (priorities by Sub-basin Strategy Group), landowner willingness, match and other readiness criteria. Therefore, this list represents a comprehensive list of actions project sponsors are actively working to advance. These actions are informed by recommended specific sequencing laid out in the ten-year *Plan*, but are not to be considered a definitive list of projects that will absolutely take place over the next three years.

All projects in the work program are consistent with the priorities laid out in the *Plan*. In addition to capital and operating projects, the work program highlights protection measures, harvest, hatchery, and H-integration needs in the basin. The narrative is structured by the questions posed by the Puget Sound Partnership and Recovery Implementation Technical Team:

- Watershed Context – an overview of the watershed characteristics, the plan and the people involved in implementation.
- Background/Planning/Logic of the Recovery Plan – a description of the watershed population and habitat goals and strategies and the changes to our implementation approach.
- Barriers and obstacles for implementation – including a discussion of the adaptive management and monitoring plan development and an assessment of recovery progress over the next 10 years.

In previous years' updates, the basin developed fairly comprehensive implementation tracking information. For 2013 the information being requested by the region has shifted, as a result of their push for watersheds to implement the RITT Common Framework, resulting in comprehensive adaptive management plans. With this information, the Forum decided to reduce the amount of effort put into implementation tracking for 2013, with a return to more detailed tracking the following year, in advance of the push for another Puget Sound Acquisition and Restoration (PSAR) funding request. However for 2013, the Snohomish Basin did focus on further refining the Harvest, Hatchery and H-integration information and conversations over 2012/2013, which is reflected in this update.

## Section I - Watershed Context

### *Q1: Provide a brief overview of the characteristics of your Chinook Salmon Recovery areas*

#### Watershed Characteristics

Formed by the convergence of the Skykomish and Snoqualmie Rivers, the Snohomish River flows for 21 miles through a broad alluvial valley and estuary before discharging into Possession Sound. Its 1,865 miles lie within eastern central Puget Sound and is nearly evenly split between two counties (King and Snohomish). With over 1,700 identified rivers and tributaries, it is the second largest watershed in Puget Sound. Its major rivers, the Skykomish, Snoqualmie and Snohomish are home to 9 salmonid species in the watershed, 3 of which are listed: Chinook salmon, bull trout char, and steelhead trout. Within the Puget Sound Evolutionary Significant Unit (ESU), Snohomish Basin Chinook populations comprise the Skykomish Chinook and Snoqualmie Chinook. Listed steelhead populations include the: Snohomish/Skykomish River Winter-run steelhead, Pilchuck River Winter-run steelhead, North Fork Skykomish River Summer-run steelhead, Snoqualmie River Winter-run steelhead, and Tolt River Summer-run steelhead. Within the Snohomish/Skykomish Core Area, four populations of bull trout include: North Fork Skykomish River, Salmon Creek, South Fork Skykomish River, and Troublesome Creek.

- Snohomish County hosts the Lead Entity.
- The Snohomish Basin Salmon Recovery Forum (Forum) is the citizen's committee. The 41 member committee includes high level decision making representatives from federal, state and local governments; the Tulalip Tribes, 7 special purpose districts, and 11 special interest groups including 4 farmers and 3 citizens. The Snohomish Basin Salmon Recovery Forum provides a forum for coordinating and responding to the Endangered Species Act listings at the local level and promotes the implementation of the *Snohomish River Basin Salmon Conservation Plan*.
- The Snohomish Basin Salmonid Recovery Technical Committee (TC) is an autonomous group that primarily consists of lead technical staff from federal, state, local and tribal governments as well as other groups in the basin. The Technical Committee provides support for the protection and enhancement of the abundance, productivity, diversity and spatial structure of all salmonids in the Snohomish River Basin.
- The Policy Development Committee (PDC) consists of forum members, alternates and staff and generally supports policy development for the Forum. The Policy Development Committee identifies, analyzes and develops policy options and implications and makes recommendations to the Forum.
- The Project Working Group (PWG) acts as a subcommittee to both the Technical and Policy Development Committees and was initiated by project sponsors in the Basin, seeking to work together on implementation issues surrounding restoration projects.
- Despite the extensive engagement of different entities in the technical and citizen's committees, there are a few additional entities identified that members agree should be engaged that are not currently. For the Forum, small industrial timber operators could be included. For the Technical Committee, the Department Natural Resources could be included.

**Q2: Describe the process for developing your 3-year work plan narrative and project/activity list. Who are the stakeholders involved and what are their roles? Are harvest and hatchery managers involved in your planning group or have they had an opportunity to comment or consult on your 3ywp?**

**Table 1: 3 Year Work Plan Development Process**

Timeline	Activity
November-December	<ul style="list-style-type: none"> <li>• <i>Project information gathered</i> - Solicit project information from basin sponsors via Habitat Work Schedule – Over 30 different organizations participate in updating and providing project information for top, high priority projects for salmon recovery. Project information includes restoration, acquisition, acquisition/restoration combined, hatchery, harvest, and H-integration projects. HWS primarily hosts the habitat projects.               <ul style="list-style-type: none"> <li>○ Step 1 –Project Sponsors update project information in HWS and add new/additional projects (Nov/Dec)</li> </ul> </li> </ul>
January-February	<ul style="list-style-type: none"> <li>• <i>Watershed approval of the 3-year work plan process</i> – any proposed changes to the information in the plan (e.g. PSP Guidance changes) or process are vetted through committees (TC, PDC, Forum)</li> <li>• <i>Project information gathered</i> - Solicit project information from basin sponsors via Habitat Work Schedule – Over 30 different organizations participate in updating and providing project information for top, high priority projects for salmon recovery. Project information includes restoration, acquisition, acquisition/restoration combined, hatchery, harvest, and H-integration projects. HWS primarily hosts the habitat projects.               <ul style="list-style-type: none"> <li>○ Step 2 – Solicit new projects for the 3 year work plan (Jan/Feb)</li> </ul> </li> </ul>
February-March	<ul style="list-style-type: none"> <li>• <i>Data QA/QC</i> - Individual communications (phone calls, emails, meetings, etc.) with all project sponsors who have projects on the 3-year work plan to obtain additional information that is not captured in HWS but required for the 3-year work plan. The Lead Entity also requests information on non-HWS projects (e.g. harvest, hatchery, h-integration) at this time.</li> <li>• <i>H-integration, Harvest, and Hatchery Information collected:</i> Co-managers consulted (phone calls, emails, meetings, etc.) to identify changes to hatchery, harvest, and h-integration components for the 3-year work plan.</li> <li>• <i>Synthesis and Analysis:</i> Information is analyzed by Basin staff and used to update the project spreadsheet and narrative portions of the 3-year work plan.</li> </ul>
April-May	<ul style="list-style-type: none"> <li>• <i>Final 3-year work plan approval</i> <ul style="list-style-type: none"> <li>○ <i>Project Working Group</i> - review and provide feedback to basin staff</li> <li>○ <i>Technical Committee</i> - review and provide feedback to basin staff</li> <li>○ <i>Policy Development Committee</i> - review and provide feedback to basin staff</li> <li>○ <b><i>Snohomish Basin Salmon Recovery Forum</i> - Final approval of the 3-year work plan for submission to PSP</b></li> </ul> </li> </ul>

## Section II: Background/Planning/Logic of the Snohomish River Basin Salmon Conservation Plan

*Section II: Q1 - What are the recovery goals for your watershed for Chinook salmon? Include information on both population goals (VSP parameters) and habitat goals.*

### Watershed Population Goals

For Chinook Salmon, the Forum adopted planning targets set by the co-managers and supported by Shared Strategy. In the Snohomish River basin, the planning range is approximately 75-80% of historic Chinook population estimates over a 50 year timeframe. The Snohomish River Basin Salmon Conservation Plan is a multi-species plan and therefore other species are also considered in recovery. For Bull Trout, the forum agreed to work toward targets set by USFWS. Actions to protect and restore Chinook habitat will also protect and improve bull trout habitat, which formed the foundation for USFWS's letter of concurrence for bull trout recovery. For Coho, the Forum wants to take action that help keep coho populations viable and avoid future listings under the ESA. The following tables provide explanation of the adult and juvenile abundance recovery targets identified for the basin for Chinook and bull trout char, as part of the Plan (2005).

**Table 2: Chinook Spawner Abundance and Recovery Targets and Ranges for the Snohomish River Basin (Plan, p. 4-4)**

Population	Mean spawner abundance for 1996-2000	Low productivity planning range for abundance	Low Productivity planning target for abundance (productivity in parenthesis)	High productivity planning target for abundance (productivity in parenthesis)
Skykomish	1700	17000-51000 (1.0)	39,000 (1.0)	8700 (3.4)
Snoqualmie	1200	17000-33000 (1.0)	25000 (1.0)	5500 (3.6)

**Table 3: Chinook Juvenile Migrants Recovery Targets for Snohomish River Basin (Plan, p. 4-6)**

Population	Current Recent Averages of Juveniles (from 2005)	Number of Juvenile Migrants	
		Low Productivity	High Productivity
Skykomish	350,000	3,600,000	2,000,000
Snoqualmie	230,000	2,100,000	1,300,000

**Table 4: Recovery Target for Snohomish-Skykomish Core Area Bull Trout Populations (Plan, p. 4-10)**

Estimated existing number of local populations (not including populations with primarily resident forms)	3
Estimated existing number of local populations with >100 adults	1
Recovered minimum number of local populations with >100 adults	3
Recovered minimum number of core area adult abundance target (adjusted for natural habitat limitations)	500

**Regional Context for listed Chinook salmon:** The Snohomish Watershed is within the Whidbey Basin Major Population Group (MPG) which includes the Skagit, Stillaguamish and Snohomish watersheds and a total of unique 10 populations within the 3 watershed areas. In their final supplement to the Chinook recovery plan, NOAA fisheries and the Puget Sound Technical Recovery Team (PSTRT) identified that to achieve recovery of the ESU (a viable ESU for Puget Sound Chinook salmon), all 22 populations need to improve and within the Whidbey Basin the Suiattle (very early) and 1 each of the early, moderately early and late forms of Chinook must be at low risk of extirpation. Both the Skykomish and Snoqualmie populations are considered “late forms”. NOAA did not prioritize populations that must get to low risk from among the Whidbey Basin Major Population Group, though at least one Snohomish Basin population at low risk of extirpation would likely be necessary.

**Snohomish Basin VSP Strategies and Actions**

NOAA fisheries defines a viable salmon population as one that has a negligible risk of extinction due to threats from demographic variation, location, environmental variation, and genetic diversity changes of 100 years. The four components or parameters of a viable population are: abundance, productivity, spatial structure and diversity. Table 5 below highlights the strategies and actions described in the Plan to improve harvest, habitat, and hatchery management to address each of the viable salmon population parameters.

**Table 5: Viable Populations Parameters for Habitat, Harvest, and Hatchery Strategies (Plan, p. 7-2, table 7.1)**

	Abundance	Productivity	Spatial Structure	Diversity
<b>Habitat</b>	Restoration and preservation actions focused in subbasins with high current and/or potential use; i.e. large mainstems, estuary, nearshore	Restoration and preservation actions that benefit habitat quality and survival; focused on improving rearing habitat in and downstream of spawning reaches; i.e. large woody debris, edge habitat, estuarine marsh, floodplain connectivity.	Restoration and preservation strategy across the basin including smaller mainstem and large tributaries with rearing and spawning populations	Restoration and preservation actions to address the life history needs of the Skykomish and Snoqualmie populations; actions that provide for habitat needs of all life history trajectories.
<b>Harvest</b>	Set a low Maximum Harvest Rate; reduction in the annual harvest rate to below 21% (FRAM) to take advantage of habitat gains and rebuild run sizes	Harvest practices that allow for continued population growth rather than fixed escapement.	Most harvest is on a mixture of fish from all portions of the basin to prevent disproportionate harvest of fish using a specific portion of the basin.	Maintaining average annual harvest rates below 21% (FRAM) is expected to increase average age at spawning, average size, average fecundity, and representation of all age classes in the population.
<b>Hatchery</b>	Mass marking of hatchery salmon to allow easy visual identification and release of wild fish; programs designed to permit time-and-area selective harvest of hatchery fish.	Incorporation of natural origin fish into hatchery broodstock to increase fitness of integrated population. Reduce hatchery releases to levels that maximize potential risks of predation and competition with wild salmon.	Use weir and trapping protocols at hatchery facilities that prevent blockage and migration delays.	Use Skykomish-origin stock at the Wallace River and Tulalip hatcheries to reduce losses in population diversity and genetic fitness of the Skykomish wild population.

### Habitat Goals

Building on the long-term vision and recovery approach, the Forum recommends significantly improving habitat conditions in the next 10 years. The Forum agreed to pursue quantitative 10-year habitat improvement milestones for the *nearshore, estuary, mainstem* and *lowland tributary* sub-basin strategy groups, shown in the tables below. For the Mainstem primary restoration sub-basin strategy group, the Forum recommends that 40-60% of the habitat milestones be accomplished in the Snohomish County portion of the basin and 40-60% in the King County portion of the basin. In addition to these targets, the plan recommends improving other habitat conditions across the basin: fish passage, forest roads, forest cover, riparian habitat, impervious surfaces and water quality coupled with regulatory and policy actions as well as technical assistance.

To understand the watersheds progress toward these goals, please see the habitat protection (p. 9) and restoration (p. 12) tables under questions 2-4.

**Table 6 – 10-Year Habitat Gains Needed in Key Sub-Basin Strategy Groups (Plan, p. 1-6)**

Sub-Basin Strategy Group and Habitat Condition	Current Intact (2005)	Needed Gain in Next 10 years (Including Current Path Gains) (2005-2015)	Total Needed at Year 2015
Nearshore Beaches and Shoreline	8.4 miles	At least 1 mile	At least 9.4 miles
Estuary: Tidal Marsh	1,483 acres	1,237 acres	2,720 acres
Mainstem Primary Restoration:			
Restored Edge Habitat	236 miles	10.4 miles	246.4 miles
Restored Riparian Habitat	5,991 acres	256 acres	6247 acres
Restored Off-Channel Habitat	350 acres	167 acres	517 acres
Large Woody Debris	N/A	41 new log jams	

**Table 7 – Riparian Forest and Off Channel Habitat Gains in Other Sub-Basin Strategy Group (Plan, p. 1-6)**

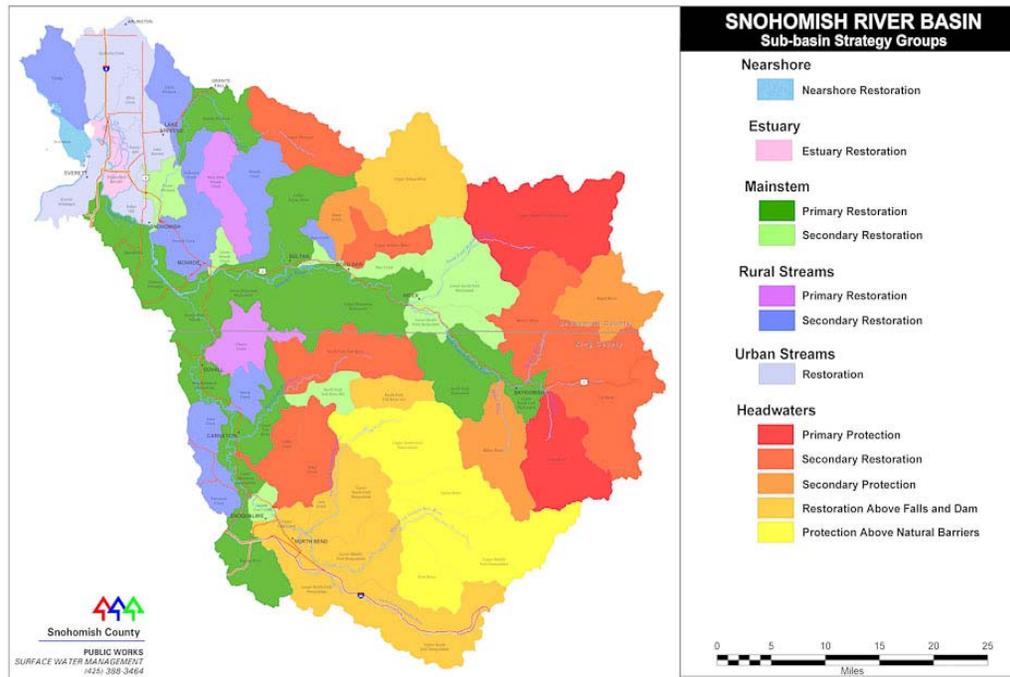
Sub-Basin Strategy Group and Sub Basins	Riparian Forest (acres)		Off Channel Habitat (acres)	
	50 year	10 year	50 year	10 year
Mainstem –Secondary Restoration	31	6	27	6
Rural Streams – Primary Restoration	0	0	49	10
Rural Streams – Secondary Restoration	0	0	203	41
Urban Streams	379	75	0	0

**Section II – Q2 - What is the current strategy to accomplish the recovery goals and what assumptions is this strategy based on? Q3: What new knowledge or information has changed your strategy, assumptions or hypotheses since your recovery chapter was written? Q4: How is the sequencing and timing of actions or projects done in such a way as to implement the strategy as effectively as possible?**

For Section II - Background/Planning/Logic of the Plan - questions 2-4 were answered by the “H’s” identified in the recovery plan - habitat protection, habitat restoration, hatchery, harvest and h-integration. Each “H” section describes hypothesis/assumptions, associated strategy and approach, sequencing and timing, summarized 3-Year outcomes, funding needs, changes between 2012 and 2013, and finally Pace/Status of each of the “H’s”. This includes any new information that may have changed our implementation strategies or hypotheses in the Plan.

**Habitat Overview: Sub-basin Strategy Groups Identify Protection and Restoration Priority Areas**

As part of the development of the habitat strategic framework in the Snohomish River Basin Salmon Conservation Plan, each of 62 sub-basins and nearshore areas was assigned to one of twelve Sub-basin Strategy Groups (SBSG), based on three main factors: basin location (geomorphic characteristics, land-use, role in supporting salmon life history stage), condition of watershed processes (hydrology, sediment, and riparian), and current and potential salmonid use (Appendix A). For each SBSG, the Plan has a unique hypothesis and tailored recovery strategy through the identification and prioritization of specific preservation and restoration actions. These prioritized strategies can be found in Appendix B.



## **Habitat Protection**

**Habitat Hypothesis/Assumptions:** The loss of rearing habitat quantity and quality along the mainstem rivers, estuary and nearshore is thought to be the primary habitat factor in the decline of Snohomish Basin Chinook salmon. In other words, the basin is thought to contain sufficient high-quality spawning habitat to support recovery, but subsequent juvenile production is thought to be severely limited by the disconnection of floodplain and estuarine habitats and degradation of nearshore habitat. To achieve a net gain of salmon habitat, restoration actions must be coupled with the protection and preservation of existing functional habitat. Protection actions to preserve high priority habitat and watershed function are given the highest priority within every Sub-basin Strategy Group (Appendix B).

**Strategy/Approach:** All areas of the basin have a role to play in recovery. Overall, the role of sub-basins in protection is to maintain base levels of habitat structure and function necessary to support habitat forming conditions throughout the watershed. Within Sub-basin Strategy Groups, protection actions should focus non-specifically on protection of habitat forming processes, although the Plan does show key quantities of habitat to protect in the benchmark tables. Protection of these processes ensures that restoration actions will build more habitat and improve VSP parameters.

Since 2005, staff have worked on seeking solutions to better protect habitat, along with partners in the Puget Sound Partnership, the tribes and others. A first focus was on evaluating land cover change and seeking answers to why changes took place. Analysis of the changes was fairly straightforward, though finding causality was very difficult and seeking change even more so. Further, political sensitivities around regulations and enforcement quickly divide partnerships and become non-starters for many jurisdictions. Basin staff have maintained that some level of regulatory review/analysis is necessary, but it needs to take place outside of the watershed and watershed groups, to maintain their balance and ability to move forward on many priorities and to ensure a higher level of transparency and trust in the process. The Tulalip Tribes has embarked on a regulatory analysis, *A Comparative Analysis of Resource Management and Restoration Policies and Authorities of the Tulalip Tribes and Adjacent or Overlapping Jurisdictions*, which is seeking to evaluate protections across jurisdictional boundaries and evaluate potential conflicts and gaps to suggest potential actions forward. Parallel to this effort, the basin acquired EPA funding to approach protection from a similar direction as was developed for the restoration part of the plan: work with partners to find strategies that directly reduce the pressures on habitat that result in habitat losses. Partners hope that evaluating what kinds of pressures affect hydrology (the focus of the grant), then applying strategies for acquisition, education/outreach, incentive programs and to a lesser extent regulations will result in better protected habitat. Thus, setting targets and recommending strategies would allow more flexibility of partners to find actual projects and programs that would result in protection, without blame or trying to enforce actions where site or area conditions do not match.

### ***Sequencing and timing:***

**Habitat (overall):** Protection is prioritized over restoration, from cost and ecological constraints. This overarching framework follows the direction in the regional recovery plan. Where protection is not achieved, other Hs may need increased activity to fill the gap.

Despite the economic downturn of the last several years, development shows signs of expanding within the Snohomish Basin, potentially threatening loss of habitat. Some ecological stressors associated with the spread of impervious surfaces associated with development, such as altered hydrologic and sediment processes, will also be exacerbated by climate change. Simultaneously, limited natural resources (such as water and land) are placing different

societal interests in direct competition. Until some of the approaches above provide different direction based on high risk of degradation and focused strategies to advance protection opportunities or risk reduction, protection efforts as outlined in the Plan should guide activity in the interim.

**Summarized 3-Year Outcomes:** Habitat protection progress will greatly be advanced by EPA Puget Sound Watershed Management Assistance funds Snohomish Basin partners (Snohomish County, Tulalip Tribes, and King County) received in 2010 (Project ID 07-NC-014). This 4-year grant will enable the basin to develop a protection strategy for hydrologic processes. In addition to this grant, the Tulalip Tribes with partners in the Pilchuck River Sub-basin, conducted a pilot project following the proposed strategy methodology. Lessons learned from this pilot project are being applied to the broader Snohomish Basin project. At the end of the EPA-funded grant, the analysis will facilitate subsequent work guiding strategic habitat protection actions that will abate threats to habitat. The Snohomish Basin is also working to establish cumulative effectiveness elements in the basin-wide monitoring and adaptive management plan being led by the PSP and RITT. This monitoring will provide a systematic evaluation of habitat change, capturing both habitat improvements and degradation, throughout the basin. In addition, the tribes' regulatory review effort will shed light on gaps and conflicts that may affect recovery efforts.

In advance of a more developed protection strategy and information about habitat change, several habitat protection projects are included in the 3-year work program project list, illustrating the need for early action to advance protection efforts. These projects include the development of an acquisition strategy along the nearshore, acquisitions along priority reaches of mainstem rivers to protect intact juvenile rearing habitat, and acquisitions in the rural and headwater areas aimed at protecting hydrologic and sediment watershed processes (all identified as Tier 1 actions in the Plan). Additional non-capital efforts encourage best management practice implementation and land-use specific stewardship, and outreach for general environmental awareness. Analysis results from several projects highlight that habitat protection, in its current guise, may not be protecting habitat. The Treaty Tribes' Treaty Rights at Risk white paper, and the NMFS' 2011 Implementation Status Report both point to losses in habitat, whether from structural issues within the regulatory framework to implementation and enforcement of regulations. Work with the region and with the basin's EPA-funded grant will be a large first step in addressing this issue. Furthermore, with new protection strategies in place, effectiveness results will take time.

**Funding:** Funding requirements for habitat protection are difficult to summarize. Funds for acquisition are the most straightforward to calculate, but only capture one approach out of many needed for protection. Costs for other tools often associated with personnel costs to provide technical assistance, conduct landowner outreach, and interface on policy issues are much more challenging to calculate. Given that investments made in habitat protection have broad societal benefits and costs, it is necessary to more rigorously evaluate funding mechanisms and formulate a funding strategy.

**Changes between 2012 and 2013:** This work plan continues to reflect the primary importance of habitat protection identified in the work plan and sequencing issues related to habitat protection and restoration. With the funding of EPA's Puget Sound Watershed Management Assistance Funds and current efforts to investigate market-based mechanisms for protection, we anticipate that future work plans will be more strategic and directive in identifying protection needs and linking goals to available tools. Greater effort to secure rights to real property in the headwaters by Forterra would improve protection of habitat forming processes; however, acquisition of interest in real property has been considered a capital/restoration project in the basin, because most properties require some level of restoration in the watershed.

**Pace/Status of Habitat Protection** – this table has not been updated from the 2012 3-year work plan and reflects actions as of 2011. Therefore, activities that were completed in 2012 are not captured.

Table 8: Habitat Protection (2012)	2005 Intact	Status	3-Year Outcome Needed to be on Track in 3 yrs?	Work Plan Meets this Need?
<b>Nearshore Beaches and Shoreline:</b>		<p>Habitat loss is not systematically monitored throughout the basin. Current status information includes:</p> <ul style="list-style-type: none"> <li>• Mainstem riparian habitat loss pilot project (Skykomish River only, Middaugh 2010)</li> <li>• High resolution land cover change analysis (Pierce, WDFW, 2011)</li> <li>• King and Snohomish Counties critical areas monitoring</li> <li>• Acquisition reporting</li> </ul>	<p>Snohomish Basin Watershed Characterization and Protection funded and Watershed Characterization and Characterization of reach-scale processes within protection priority sub-basins work elements completed. Tulalip Pilchuck protection pilot project advances the larger Snohomish EPA grant.</p> <p>Tulalip Tribes comparative analysis of resource management and restoration policies and authorities project is developing tables of overlapping jurisdictional authorities and where they are consistent, in conflict, or where gaps exist.</p> <p>Development and implementation of Status and Trend (Cumulative Effectiveness) element of Basin Monitoring Plan</p>	<p>Yes</p>
Riparian Areas (focus reaches)	297 acres			
Edge Habitat (focus reaches)	22 miles			
<b>Estuary: Tidal Marsh</b>				
Riparian Areas (focus reaches)	165 acres			
Edge Habitat (focus reaches)	27 miles			
Forest Cover	687 acres			
<b>Mainstem-primary:</b>				
Riparian Areas (focus reaches)	5,991 acres			
Edge Habitat (focus reaches)	236 miles			
Forest Cover	116,633 acres			
<b>Mainstem-secondary:</b>				
Riparian Areas (focus reaches)	2,497 acres			
Edge Habitat (focus reaches)	79 miles			
Forest Cover	44,935 acres			
<b>Rural Streams Primary:</b>				
Riparian Areas (focus reaches)	709 acres			
Forest Cover	18,286 acres			
<b>Rural Streams Secondary:</b>				
Riparian Areas (focus reaches)	258 acres			
Forest Cover	36,624 acres			
<b>Urban Streams</b>				
Riparian Areas (focus reaches)	137 acres			
Forest Cover	8,558 acres			
<b>Headwaters Primary Protection</b>				
Riparian Areas (focus reaches)	1,318 acres			
Forest Cover	61,865 acres			

## Habitat Restoration

**Hypothesis:** The loss of rearing habitat quantity and quality along the mainstem rivers, estuary and nearshore is thought to be the primary habitat factor in the decline of Snohomish Basin Chinook salmon. In other words, the basin is thought to contain sufficient high-quality spawning habitat to support recovery, but subsequent juvenile production is thought to be severely limited by the disconnection of floodplain and estuarine habitats and degradation of nearshore habitat.

**Strategy/Approach for the first 10 years:** The *Plan* calls for actions focused on restoring and preserving watershed processes across the basin, with special emphasis on rearing habitat improvements in these high-priority environments. For the first decade of *Plan* implementation, a generalized allocation of resources between the strategy groups includes:

- 80% of basin-wide capital project resources should be directed toward restoration and protection efforts in the Nearshore, Estuary, and Mainstem Sub-basin Strategy Groups (SBSG).
- 15% of basin-wide capital project resources should be funded toward restoration and protection efforts in lowland tributaries.
- 5% effort should be directed toward effort in headwater areas.

The 10-year target allocation is not only based primarily on ecological prioritization, but also reflects practical and political considerations.

There have been no major changes in our restoration strategy or hypothesis since the adoption of the *Plan* in 2005, though we have recognized that we are behind in our implementation of restoration targets and that as habitat is lost, additional restoration may be needed. The watershed does not yet have a way of creating this balance sheet. See Table 5 for more information on restoration target tracking.

### **Sequence/Timing:**

**Habitat:** Protection is prioritized over restoration, from cost and ecological constraints. This overarching framework follows the direction in the regional recovery plan. Where protection is not achieved, other Hs may need increased activity to fill the gap. In a recent presentation to the Snohomish Forum, the co-managers outlined that habitat quality and quantity are still limiting freshwater production in the basin, that the populations may still show density dependence and that changes in hydrology may be susceptible to scour due to the increasing frequency of high flows in the rivers. This information points to a critical need to bring the larger scale riverine and estuarine projects to completion to build more habitat and resilience in the system. Funding is still limiting addressing this need.

One consideration for sequencing is project priority. The Snohomish River Basin Salmon Conservation Plan lays out a robust framework that prioritizes restoration actions (Appendix B). This work plan further refines this prioritization scheme by adding implementation progress, sponsor capacity, and a rough sequencing element to more clearly categorize projects into *most pressing need*, *pressing need*, *need* (Appendix C). Through this process, Tier 1 projects with sponsor capacity, that address lagging benchmarks are identified as being our *most pressing needs* – the most critical projects to complete soon. These projects tend to be projects in the mainstem primary sub-basin strategy group that will restore off-channel or edge habitat, estuary projects to restore tidal marsh, and nearshore projects to protect or restore beach habitat. Projects identified as being a *pressing need* include Tier 1 actions that

address benchmarks that are currently on pace to meet 10-year benchmarks (e.g., mainstem primary riparian restoration) and Tier 2 and 3 actions that are not on pace to meet 10-year benchmarks (e.g., mainstem secondary, rural, and urban riparian restoration). While advancing these projects are not as urgent as those categorized as *most pressing need*, it is important that we maintain our current pace for Tier 1 actions currently on pace, and accelerate our implementation rate for lower tier projects that are behind in implementation. The final category of projects, those identified as *need*, reflect projects that are part of the plan and are needed to reach recovery. It is important that we continue to advance these projects too.

Prioritization alone does not identify which projects should be implemented in what order. At this time, additional sequencing considerations are being addressed to varying degrees on the Subbasin Strategy Group scale. Estuary monitoring partners are working collaboratively to coordinate which projects will apply for what funding, and projects are coming on-line at different times. In the nearshore, the nearshore sediment assessment has guided priorities and action which are now applying for construction funds, where new fund sources highlight beach and backshore restoration provide an opportunity. For large, mainstem river projects, sequencing is presently driven by the capacity of the project sponsors able to implement projects of this scale, landowner willingness and balancing agricultural, flood and restoration interests. The project working group has voiced general support for coordinating and sequencing projects on a smaller scale, particularly to reduce in-basin competition for funds.

### **Summarized 3-Year Outcomes:**

#### NEARSHORE, ESTUARY, MAINSTEMS

- In the **Nearshore SBSG**, the sediment design and permitting is nearly complete and has identified four nourishment projects that will be advanced for construction in 2014. These projects, along with the Port's expansion of Jetty Island will put the basin almost on track to meet the nearshore 10-year target. In addition, the Tulalip Tribes has identified an 1100 foot armored portion of Mission Beach in which they are investigating as a potential beach restoration project.
- In the **Estuary SBSG**, project sponsors continue to advance multiple large tidal marsh projects. Projects and planned work indicate the tidal marsh acreage needed to meet 10-year benchmarks may be under construction by 2015. Recent work by Snohomish County, the tribes and agricultural interests is bearing fruit through the Sustainable Lands Strategy, potentially giving estuary projects much-needed political approval to advance. Funding continues to be the key factor limiting estuary restoration projects, with their typically high cost per acre to restore, at ~\$36.9k per acre. The difficulty in advancing these large projects due to political and funding constraints may suggest the need to shift the basin's investment strategy until such issues can be overcome in the future.
- Construction is complete or nearly complete on several large-scale **Mainstem Primary SBSG** restoration projects. Project sponsors continue to achieve good spatial distribution of these projects, as work is being advanced in the Snohomish, Pilchuck, Snoqualmie, Skykomish, and Tolt rivers following the strategy of implementation along focal geomorphic units identified early in the Near-term Action Agenda process. Despite this effort, the ability to meet 10-year benchmarks at the end of the 3 year period covered by the work plan is unclear. Completed projects have been removed from the plan while assessment and feasibility studies continue to identify new projects to move toward construction. While we appear to be on pace to meet riparian benchmarks based on project implementation data, riparian loss since the adoption of the plan appears to be significant enough to require more restoration (WDFW, SnoCo reports). Maintaining the pace of riparian restoration will be important despite these issues. Other issues include funding levels and the coordination and balance of competing interests in these river systems.

- The **Mainstem Secondary SBSG** is not well represented by the project list. Though this was identified in the plan as a secondary category, it is still imperative that work be accomplished in all areas of the basin in order to achieve overall recovery, including those identified as secondary. King County, USFS, Forterra, and others are starting to evaluate actions that would direct activities within this SBSG including a newly proposed acquisition by Forterra. Limited funding resources make it challenging to see progress in many of the secondary areas given an overall need to continue to advance some of the actions in the primary restoration groups.

#### LOWLAND TRIBUTARIES

- Work in **Rural Streams SBSG** is coordinated among multiple basin partners and assessments direct restoration priorities. In the Rural Primary Subbasin Strategy Group, the habitat and geomorphic assessment in West Fork Woods Creek Subbasin is nearly complete and will direct actions by a number of project sponsors. Work in Cherry Creek also has a long history of collaborative and sustained effort, and actions there have advanced including the Waterwheel Creek project which created a re-meander of the tributary and increased off channel habitat. While many riparian and fish passage opportunities are identified in this work plan, opportunities for restoring side-channel habitat are lacking.
- In the **Urban SBSG**, efforts have been funded largely through sources outside the basin's purview. Such projects are not always reported by these sponsors, though actions are taking place. As mentioned in Table 5, implementation in the 3-year Work Plan does not appear to be on-track to meet the 10-year targets. Staff will need to evaluate progress in the urban areas more closely for implementation monitoring.

#### HEADWATERS AND OTHERS

- On page 8-7 of the *Plan*, the recommended 10-year strategy for prioritizing and replacing fish passage culverts is to replace 60 culverts within a half mile of focus reaches (mainstem rivers, estuary and nearshore). Many more culverts have been prioritized and replaced. Implementation monitoring is needed to evaluate where these culverts have been replaced, the biological benefit of this work relative to other priorities, such as where off-channel habitat is potentially a higher priority for addressing productivity. Basin staff will need to evaluate whether to lower the sequence rank of culvert projects in the future to reflect the level of effort and need in the basin.

**Funding<sup>1</sup>:** Identified 3-year funding needs are about \$51.6 Million for about \$116 Million<sup>2</sup> in total project costs, roughly equaling the Forum annual funding goal of \$15 – \$17M per year, using the total cost of identified restoration projects, subtracting the Mukilteo Creosote project as an outlier due to the high total cost, then subtracting funds already in-hand. This method takes into consideration that some projects, such as Qwuloolt are already fully funded, yet remain on the list as a continuing activity. Of the identified funding needs, roughly 79% is allocated to the nearshore, estuary and mainstem rivers; roughly 13% to the lowland tributaries; and 8% to the headwaters. This allocation does not match the allocation of effort identified in the *Plan*, mostly because of efforts by Forterra to secure easements and acquisitions in the headwaters areas in support of protecting the hydrologic and sediment processes in the basin. While anticipated funding needs generally correspond with both overall funding targets and allocation splits, it is important to highlight that past analysis of restoration funding has identified that we have been implementing the habitat part of the Plan at a rate of 34% per year. As is expected given the past funding deficit, implementation monitoring updated in 2012 (*not updated from the 2012 3-year work plan and reflects actions as of 2011*). (Table 7 below) confirms that we are not on pace to meet our benchmarks. Even assuming no net loss in habitat function (optimistic, given the discussion under

---

<sup>1</sup> Information in this draft is based on April 24, 2013 project list. Information is also calculated on funding estimates by basin staff as this data was not formally collected in 2013 with a focus instead on Total Project Cost in the list. This also affects the allocation of funds by SBSG.

<sup>2</sup> Total project cost of \$116 M includes Mukilteo Creosote project (~\$21M). If these were excluded the total project costs would be ~\$97M.

protection above), we will need to increase the rate of implementation significantly to meet our 10 year-benchmarks. The current backlog of project work stands at ~\$90M and it is unlikely that we will be able to address this deficit with the proposed work plan. Basin staff will be conducting a more in-depth analysis of implementation and funding in advance of revising our funding strategy in 2013/2014. Regardless, unless investment in salmon recovery is significantly increased implementation of the 10-year plan will take 30 years, seriously impeding the recovery process and reducing the likelihood that the Forum's attempt at using resiliency to mitigate some of the effects of climate change would be operative.

**Changes between 2012 and 2013:** In 2012 and 2013, twenty-seven projects representing approximately \$28.8 Million worth of assessment, planning and construction were completed or are fully funded and scheduled to be completed during the 2013 construction season (Appendix E). This number underestimates the amount of work accomplished last year, because many projects remain on this list due to maintenance needs and several of the projects were fully funded outside of last year. Thirteen additional projects were removed from the list due to a need for further prioritization, lack of sponsor capacity to advance the project, landowner willingness changes, project is being addressed under a different project, change in sponsor priorities, and no reason identified. Nineteen new habitat capital projects were added to the work plan in 2013.

**Pace/Status of restoration benchmarks<sup>3</sup>:** The following table shows implementation – or activity – progress toward the Plan's restoration targets as of the 2011 restoration season. This table does not reflect additional work that has been accomplished in 2012 or 2013. Tracking implementation of restoration actions is part of an iterative process in monitoring, reporting and adaptively managing the strategies and actions outlined in the Plan and will continue to evolve in the future. The table neither reflects the effectiveness of the projects implemented (achieving full ecological function), nor does it reflect the overall changes in the watershed landscape (planted riparian areas vs. areas lost due to development or channel migration). Our restoration actions are long-term investments toward achieving habitat conditions that will support healthy Chinook populations. Some actions, such as removal of a migration barrier, realize immediate impacts, while others such as riparian plantings take decades to reach maturity. While building a mature riparian forest takes time, the actions in the table are critical to our ultimate goal of restoring natural processes. The values in the table also have a range of confidence associated with them. Confidence in the figures is eroded where we have less data on exact overlap with focus reaches, more project sponsors implementing projects, a range of restoration methodologies and approaches to measuring outcomes, and issues of how to quantify restoration outcomes where we "let the river do the work for us." Again, monitoring these actions and their associated effectiveness will evolve and change over time, and both project sponsors and the Technical Committee remain supportive of resolving these issues.

---

<sup>3</sup> Information for this table is from 2012. There have not been restoration gains that would have significantly changed the table in 2013 and the Forum decided to focus staff resources elsewhere in 2013 as this information was not explicitly requested in the PSP guidance. This table will be updated in the next 3-year work plan update (2014) or when there has been significant progress made toward the restoration benchmarks.

*This Habitat Restoration table has not been updated from the 2012 3-year work plan and reflects actions as of 2011. Therefore, activities that were completed in 2012 are not captured even though progress has been made in some areas as seen on the completed projects list. In addition, projects that will be completed in 2013 are also not captures. Those metrics have not been recorded in this table. Most notable is the Waterwheel Creek Restoration project which advances the targets identified in the Mainstem Secondary sub basin strategy group.*

Table 9: Habitat Restoration 2012	Needed Habitat Gain in 10 years	Progress since 2005	Percent 10-year Benchmark	Currently on Target to Meet Benchmark?	3-Year Outcome Needed to be on Track in 3 yrs?	Work Plan Meets this Need?
Nearshore Beaches/Shoreline	At least 1 mile	0.2 mi	20%	Progress Made	3 Designs, 3,700 ft. restored	Unknown
Estuary: Tidal Marsh	1,237 acres	375 acres	30%	Progress Made	at least 646 acres	Unknown
Mainstem-primary:						
Restored Edge Habitat	10.4 miles	1.9 mi	18%	No	at least 6.5 mi.	No
Restored Riparian Habitat	256 acres	191 acres	75%	Yes	Unknown: lack of information about habitat loss/project performance	Unknown
Restored Off-channel Habitat	167 acres	25 acres	15%	No	At least 106 acres	No
Large Woody Debris	41 logjams	6	15%	Progress Made	Unknown: lack of information about habitat loss/project performance	Unknown
Mainstem-secondary:						
Restored Riparian Habitat	6 acres		0%	No	4.5 acres	No
Restored Off-channel Habitat	6 acres		0%	No	4.5 acres	No
Rural Streams Primary:						
Restored Riparian Habitat	13 acres	6 acres	46%	Progress Made	5.3 acres	Unknown
Restored Off-channel Habitat	10 acres		0%	No	7.5 acres	No
Rural Streams Secondary:						
Restored Riparian Habitat	0	14 acres	met assuming no habitat loss	Yes	Unknown, given lack of information about habitat loss	Unknown
Restored Off-channel Habitat	41 acres	7 acres	17%	No	25.5 acres	No
Urban Streams:						
Restored Riparian Habitat	75 acres	21 acres	28%	Progress Made	44.2 acres	No
Restored Off-channel Habitat	0		met assuming no habitat loss	Yes	Unknown, given lack of information about habitat loss	Unknown

## Harvest Management

**Hypothesis:** The role of fishery management in the Plan is based on the premise that harvest can be limited to a rate that will not impede recovery as long as other actions (habitat protection, habitat restoration, and hatchery management) are also implemented and integrated to promote recovery.

**Strategy/Approach:** Snohomish Chinook are harvested as part of large, mixed-stock fisheries from southeast Alaska to north Puget Sound and as incidental catch in Puget Sound fisheries directed at harvestable hatchery Chinook and other salmon species. Harvest rates have declined more or less steadily since the inception of the Pacific Salmon Treaty in the mid-1980s and especially beginning in the mid-1990s just before the ESA-listing of Puget Sound Chinook salmon in 1998. The current harvest plan<sup>4</sup> assumes that sustained annual harvest rates below 21% (as measured by the Fishery Regulation Assessment Model (FRAM<sup>5</sup>)) will enable the Snohomish Chinook populations to increase in abundance and productivity consistent with the quantity and quality of habitat available throughout their life cycle. The harvest management Plan also hypothesizes that this exploitation rate is low enough to allow gains in spatial distribution, life history diversity, and better represent a natural distribution of age classes in the population.

**Sequence/Timing:** The harvest management plan was developed based on the production potential of the habitat in the period 1985-2000. Therefore, if habitat stays the same or improves above this level, the harvest guidelines should be sufficiently conservative to achieve the goal of not impeding recovery. On the other hand, if habitat degradation continues, then the guidelines may not be conservative enough. We expect the beneficial effect of harvest management actions to be apparent within a short time period, while habitat actions will take longer to manifest themselves in improved population performance. However, harvest management actions cannot contribute effectively to recovery without concurrent improvement in habitat.

**Summarized 3-Year Outcomes:** The most important outcome for the next three years is to limit both the preseason planned, and the postseason realized, overall exploitation rates below the 0.21 (as measured by FRAM) guideline. This should be easier to reach with reduced Canadian and Alaskan interceptions due to the new Pacific Salmon Treaty Annex (see below). In addition a number of harvest management tools are utilized to try to limit impacts on wild Chinook salmon. For example these including pre-season planning and post season validation modeling, time-area management to ensure harvest is limited when wild Chinook are most likely to be present, mark selective fisheries focusing take on hatchery fish, terminal area fisheries directing harvest at specific stocks, in season management to close or restrict fisheries if thresholds are met, etc. A combination of management approaches are likely needed in order to achieve the overall goals. Co-managers have completed sample collections and genetic analyses necessary to include the Skykomish population in the DNA baseline for coast-wide stock composition analysis of Chinook salmon fisheries. Identifying the Snoqualmie population is a goal in the 3-year plan and samples are being collected and analyzed for genetic distinction and incorporated into the coast-wide Chinook DNA Baseline, yet currently, we are still unable to genetically distinguish the two populations. More genetic samples are being added and analyzed and some additional comparative analysis may aid in our abilities to distinguish the Snoqualmie population.

---

<sup>4</sup> Guidelines for overall harvest impacts on Snohomish Chinook are included in the *Comprehensive Management Plan for Puget Sound Chinook: Harvest Management Component*, 2010. The plan is effective through April 30, 2014. Co-managers are currently consulting with NOAA to renew the harvest plan for 2015 and beyond.

<sup>5</sup> The FRAM is used by state and tribal co-managers and the Pacific Fishery Management Council (PFMC) annually to evaluate the cumulative effects of all projected harvest-related mortality on west coast Chinook and coho salmon stocks in all preseason proposed fisheries.

**Funding:** The work necessary for planning and managing fisheries according to the harvest management plan is funded through federal, state, and tribal fishery management programs. Coded-wire tagging, tag recovery, laboratory processing of tags, and database maintenance are funded mainly through federal funds made available to state and tribal fishery managers for this purpose. Analysis of stock composition and exploitation rates is funded through Pacific Salmon Commission implementation funds and by state and tribal co-managers in the domestic management process. These funds are mainly region- or coast-wide programs, making it difficult to separate the portion of these funds that would be spent to manage Snohomish Chinook. Determination of separate exploitation rates for the Skykomish and Snoqualmie populations, and subsequent development of separate rebuilding exploitation rates for these, is dependent on funding and implementing a coordinated, coast-wide genetic sampling and data analysis program for Chinook fisheries.

**Changes between 2012 and 2013:** The Chinook Annex to the Pacific Salmon Treaty was first implemented in 2009. This annex is reducing harvest levels closer to the 0.21 RER figure for the Snohomish basin. Given the nature of treaties, this work will continue through the ten-year life of the treaty with few revisions. The co-managers continue to negotiate harvest of Chinook salmon through the processes outlined in the treaty. The co-managers are beginning consultation with NOAA fisheries on an updated Puget Sound Chinook Harvest Management Plan for 2015 and beyond.

**Pace/Status:** Table 10 is an updated table highlighting the work on the fisheries management program. There is some additional information added to this table for 2013.

Table 10: Fisheries Management	Quantifiable Goal	Information about Progress	On Target to Meet Benchmark?	Priority (High, Medium, Low)	3-Year Outcome Needed to be on Track in 3 yrs.?	Work Plan Meets this Need?	Changes from 2012 update
Adoption of a preseason plan consistent with the rebuilding exploitation rate (RER) guideline	RER established in the Chinook Harvest Plan (2010)	Projected annual exploitation rates (total and southern U.S. (SUS) from preseason plan.	Consistent w/ plan but not always below RER (see Snohomish Chinook FRAM 2012 Validation Analysis.xlsx - covers data up to 2010)	High		Yes *	The 2013 update includes an updated FRAM validation model which covers data up until 2010. This analysis with new data has produced similar results to previous runs.
Implementation of fishing plan consistent with preseason plan	Preseason projected exploitation rate	Post-season estimate of exploitation rate (from post-season FRAM run)	Yes, recently (see Snohomish Chinook FRAM 2012 Validation Analysis.xlsx - covers data up to 2010)	High	Continue attention to in-season management plus implementation of Pacific Salmon Treaty (PST) Annex	Yes *	The 2013 update includes an updated FRAM validation model which covers data up until 2010. This analysis with new data has produced similar results to previous runs.
Attempt to develop a tool to separately assess exploitation rates for the Snoqualmie population.	Get 5 years of Snoqualmie - specific exploitation rates and productivity information.	Samples continue to be collected for genetic analysis and incorporated into the coast-wide/Puget Sound Genetic Analysis of Pacific Salmonids (GAPS) Chinook DNA Baseline, and other comparative analyses are underway. Samples have been analyzed yet still it is not possible to distinguish the Snoqualmie population. Existing baseline samples collected were sufficient to identify Snohomish Chinook and the Skykomish population, but insufficient to detect population structure within the Snohomish basin. We were able to improve the ability to distinguish the Snoqualmie population with existing data from 40% to 60%, however, the goal is to reach 80-100%, to be comparable to other regional populations that exist within the same basins given comparable sampling effort e.g. Stillaguamish where similar analyses utilizing a similar number of samples has achieved > 80% distinction.	Samples are being added to the GAPS Chinook DNA Baseline but currently there is insufficient fidelity to distinguish the Snoqualmie population from the Skykomish. Regular fishery and coast-wide sampling for this purpose is not foreseen to occur until the population can be identified (while other mixed stock analyses may be done, they would not be successful in identifying the Snoqualmie population if done at this time).	Med	1. Continue to collect genetic samples from the spawning grounds in the Snoqualmie and Skykomish to establish separate baselines for the populations in the coast-wide baseline. 2. Begin regular genetic stock identification (GSI) fishery sampling in mixed stock fisheries. Process samples once population specific baseline is established.	No - not able to distinguish Snoqualmie yet, but we are collecting and analyzing more samples.	Conversation with co-managers highlighted the concern that this will not be accomplished on the stated time frame (5 years of data by 2018) given the difficulty in distinguishing the Snoqualmie population from the Skykomish, so the 2018 date was removed. Significant progress has been made in collecting samples to establish the baseline, yet it is not sufficient to identify the Snoqualmie population from the Skykomish at this time. Significant funding has been secured for this through PSC Sentinel Stock and Hatchery Reform funding.
Development of Snoqualmie-specific RER	Separate Snoqualmie and Skykomish - specific RERs.	RER developed based on Snoqualmie data.	Work not started yet. Depends on the above.	Med	Depends on other work. Not ready in three years.	No - not able to distinguish Snoqualmie yet but we are collecting and analyzing more samples.	The conversation with co-managers highlighted that there is concern that this will not be accomplished on the stated time frame, creating a RER by 2019, given progress on the above row. While significant numbers of samples have been collected, it appears that a larger than normal sample size will be necessary if this is going to be possible at all.
Harvest practices do not alter spatial distribution or age distribution of spawners (controlled by ecological factors)	Expected spatial and age distributions under zero harvest.	observed (after harvest) distribution = expected if no harvest	Work not started yet. Plan hypothesizes that reduced harvest rates will also result in reduced effects on age and spatial distribution	Low	Next step is to develop a model to compare observed and expected distributions	No	No changes were made to this item.

### Hatchery Management

**Hypothesis:** The Plan assumes that regional hatcheries can be managed in a way that will not impede recovery, assuming other actions to promote recovery (habitat protection, habitat restoration, and harvest management) are implemented and integrated.

**Strategy/Approach:** The State of Washington and the Tulalip Tribes operate hatchery programs in the Snohomish basin to provide harvest opportunity with minimal effect on natural-origin fish. Hatchery management strategies include: increasing the genetic similarity of the Skykomish hatchery stock with the Skykomish natural population via integrated broodstock management; evaluating possible negative genetic and ecological interactions between hatchery- and natural-origin fish; addressing migration delays or blockages for natural-origin fish due to hatchery weirs, and targeting hatchery-origin fish in fisheries. The implementation plan for these strategies is the subject of a 2005 state-tribal Hatchery Memorandum of Understanding (MOU) Agreement between the Washington Department of Wildlife and the Tulalip Tribes, which was updated in 2012 and amended in 2013 as well as in updated Hatchery Genetic Management Plans (HGMP) for each of the two Chinook programs at the state and tribal hatcheries. The Tulalip Hatchery HGMP was submitted to NOAA in 2012. The Wallace River Hatchery HGMP is being submitted to NOAA in 2013. These two HGMPs have been coordinated to ensure there are no inconsistencies between them.

**Sequence/Timing:** Since 2005, natural-origin Chinook returning to the Wallace River and Sunset Falls fish traps have been selected and incorporated into the Wallace River Hatchery broodstock according to the guidelines in the WDFW/Tulalip Hatchery MOU Agreements (Tulalip and WDFW 2005, 2012 as amended in 2013). Tulalip and WDFW are also incorporating DNA-based studies to more directly determine the degree of gene flow between the hatchery and natural stock components. Studies of ecological interactions in freshwater, the Snohomish estuary, and marine areas continue. A comprehensive report on the estuary work to date, and additional coordinated studies of all freshwater, estuarine and marine areas, including offshore marine monitoring, are expected within the next few years, after which we will evaluate implications for hatchery management. Passage of natural-origin Chinook over the Tokul Creek and Wallace River weirs continues, as does trucking of fish over Sunset Falls. Regional fishery management continues to target hatchery-origin Chinook through mark-selective recreational fisheries and time-area management methods in Tulalip Bay.

**Summarized 3-Year Outcomes:** We continue to evaluate and annually report on the continuing programs mentioned above. The results of the studies of gene flow and ecological interactions will be applied to modify hatchery management assumptions and practices as soon as new findings become available.

**Funding:** Much of the implementation of the hatchery plans is funded through PSC Sentinel Stock and Hatchery Reform funds awarded to WDFW and the Tulalip Tribes. The remainder is funded with normal operations funds available to the co-managers. Monitoring of ecological interactions in the estuary is part of a cooperative NOAA Fisheries and Tulalip Tribes funded project, with new proposals in 2013 for Sea Grant funding in partnership with the UW, and NOAA fisheries planned as part of the Salish Sea Marine Survival Monitoring Plan. Gene flow studies have been funded through Pacific Salmon Commission Letter of Agreement (LOA) Chinook Technical Committee funds as well as Hatchery Reform funds granted to the Tulalip Tribes.

**Changes between 2012 and 2013:** The hatchery management program has changed to better incorporate multiple factors. The newly submitted HGMP's are recently revised and coordinated to reflect the most current programs highlighted below.

**Pace/Status:** Table 11 is an updated table highlighting the work on the harvest management program. There is some additional information added to this table for 2013.

Table 11: Hatchery Operations	Quantifiable Goal	Information about Progress	Currently on Target to Meet Benchmark?	Priority (High, Medium, Low)	3-Year Outcome Needed to be on Track in 3 yrs?	Work Plan Meets this Need?	Changes from previous years
Understand ecological interactions between hatchery- and natural-origin fish.	Ecological interactions minimally impact recovery potential. Summarize findings to date for prior freshwater and estuary work and initiate new coordinated monitoring studies to develop more specific goals and apply adaptive management.	Studying ecological interactions in freshwater, estuarine and nearshore and offshore marine habitats. Continue to develop and seek funding for this research. (NOAA Fisheries and Tulalip estuary monitoring work; Sea Grant and Salish Sea Marine Survival Study, collaborators: UW, Canada, NOAA, Tribes, WDFW, LLTK and other NGO's, etc.)	The effect of ecological interactions is currently unknown. Making progress on research. Do not currently have report on results to date.	High	*Analysis of available data * redesign studies to focus on hatchery-natural interactions (currently included in the Salish Sea Marine Survival Monitoring Plan and proposed Sea Grant comprehensive monitoring plan under development in 2013).		Since 2012 there has been an increased focus on understanding the marine survival issues in the Salish Sea. This work plan includes ecological interactions monitoring.
Estimate relative productivity and gene flow between hatchery- and natural-origin fish to better understand genetic diversity and fitness and potential effects of hatchery-origin adult spawners straying and interbreeding with natural-origin fish in natural spawning areas.	Estimate relative productivity, abundance and the effective number of breeders above the smolt traps including the estimation of successful and unsuccessful spawners (by origin, time, and location) and expand estimates to each Snohomish Chinook population and to a basin-wide total by: * Collecting and analyzing tissues for DNA analysis from Chinook spawners (of hatchery and natural origins) and natural-origin out-migrating smolts to assign parentage. * Apply genetic mark-recapture estimation methods for stream reaches above the two smolt trap sites.	1) Annual estimates of Proportion of Natural Influence (PNI) determined from gene flow (PNI <sub>G</sub> ) between hatchery- and natural-origin fish ( <i>analyses underway</i> ) 2) Use genetic mark-recapture to estimate effective population size, relative productivity, gene flow (genetic-based PNI <sub>G</sub> ). <i>Sampling has been completed necessary for genetic-based estimates of total population size (for wild and hatchery fish) has been completed for 2011/2012 (draft report completed) and 2012/2013 (currently analyzing results). Funding and work for 2013/2014 is likely.</i>	Yes Ongoing Sentinel Stocks Study and Hatchery Reform proposals to continue collecting data for genetic-based estimates.	High	Continue natural/hatchery-origin spawner (NOS/HOS) demographic assessments (NOS <sub>D</sub> , HOS <sub>D</sub> ) and gene flow (PNI <sub>D</sub> ) assessments for hatchery and natural stock components.		Use genetic based methods to more directly measure effective gene flow and apply to all VSP parameters instead of just looking at demographic (carcass) enumeration-based estimates. These approaches will be compared in future years.
Manage hatchery broodstock so that Wallace River Hatchery and Skykomish natural populations are genetically integrated. Incorporate natural-origin fish into the hatchery broodstock to increase productivity of the composite hatchery/natural spawning populations.	Integrate up to 300 natural-origin broodstock (NOB) annually at Wallace River Hatchery.	* Using genetic mark-recapture methods directed at production above the Skykomish and Snoqualmie mainstem smolt traps, estimate abundance (N) and the effective number of breeders (Nb) above the traps including the estimation of successful and unsuccessful spawners (by origin, time, and location). * Expand estimates to each Snohomish Chinook population to a basin-wide total. * Partition the genetic-based abundance estimate for natural spawning Chinook by hatchery- and natural-origin, sex, and age.	Yes - continuing to derive demographic estimates and studying genetic estimates for PNI, effective population size, and gene flow. <b>Demographic:</b> The current integration of up to 300 NOB is resulting in a demographic-based PNI of 0.5 for the Skykomish population including the Wallace River, and averaging more than 0.7 for the rest of the basin excluding the Wallace River, with 8 years of data to date. <b>Genetic:</b> Ongoing Sentinel Stocks Study and Hatchery Reform proposals to continue collecting data for genetic-based estimates.	High	Continue natural- and hatchery-origin spawner (NOS <sub>D</sub> , HOS <sub>D</sub> ) demographic- and genetic-based assessments in hatchery and natural stock components.		Used to be called "introduction of non-local hatchery broodstock into the watershed"  Revised to incorporate genetic-based methods, focus on all viability parameters, incorporating habitat and harvest with hatchery assumptions in integrated modeling, to complement demographic monitoring.
Limit the effects of broodstock integration on the population dynamics of natural-origin fish.	* Restrict taking of natural origin broodstock (NOB) to one natural spawning location (Sunset Falls) besides the Wallace River Hatchery escapement. * Limit the number of NOB taken from Sunset Falls to a maximum of 20% of the return or 225 fish, whichever is lower. * Prohibit removals of natural-origin fish in years of critical escapement.	1) Number or proportion of NOB taken from Sunset Falls return relative to total NORs passed above the falls. No NOB taken from any other natural escapement (Wallace rack returns are hatchery escapement).	Yes Tulalip Hatchery and Wallace River Hatchery Chinook HGMPs limit location and proportion of NOB removals and restrict during critical escapements.	High	1) Increase NOB on spawning grounds, 2) Continue NOB monitoring, 3) Improve gene flow monitoring.		Newly updated HGMPs established rules for fish removals. Tulalip HGMP submitted to NOAA 2012; Wallace 2013
Minimize the introduction of non-local hatchery broodstock into the watershed.	Percentage of eggs from Skykomish broodstock. Target Skykomish native broodstock to provide gametes for Wallace River and Tulalip Hatcheries.	Yes, local natural stock have been used since Green River-origin fall Chinook were discontinued at both facilities; 1997, 2004.	Yes	High	Balance hatchery production needs (to provide minimum numbers of eggs to meet program goals) with all natural spawner viability parameters while addressing potential genetic and ecological risks. Wallace River and Tulalip Hatchery HGMPs, 2012 Tulalip/WDFW Hatchery MOU Agreement as revised 2013.		
Pass fish above blockages to utilize habitat and increase natural production and limit hatchery influence on the spawning grounds (affecting productivity) while managing for other viability parameters - Wallace River	Number of Chinook above and below the Wallace River weir. Minimum natural spawner guideline (MSG): * Minimum of 878 total spawners, 351 females and 527 males (3:2 males to females or 2.5 fish per redd). * Minimum of 303 male and 202 female spawners in the lower Wallace River * Minimum of 224 males and 149 females in the upper Wallace River * Remove hatchery fish in Wallace River when above MSG and pHOS in Wallace River Hatchery HGMP.	Abundance and spatial distribution incorporated into HOS control (productivity, diversity). Estimates of the linear miles of habitat in the lower and upper Wallace River (4.2 miles lower; 3.1 miles above the weir), redds per mile and fish per redd. Minimum number of Chinook passed above, and remaining below, the Wallace River weir each year and the proportion of hatchery fish in the Wallace River. MSGs prioritize NOS; prohibit NOS removals.	see Wallace River Hatchery HGMP	Medium	Continue to implement Wallace River Hatchery HGMP.		Viability parameters factored into fish removal actions. Wallace River Guidelines (MSG, % hatchery) for hatchery fish removal developed, are in the HGMPs, and are being implemented.
Pass fish above blockages to utilize habitat and increase natural production - Tokul Creek	Pass all natural-origin Chinook that recruit into the Tokul Creek Hatchery weir to upstream habitat.	Number of [NOR] Chinook passed above Tokul Creek Hatchery each year.	Yes, NOR's have been passed 4 out of 5 years (2010 the upper creek was dewatered for bridge repair precluding passage) However, the number of NOR's returning is very small and thus there appears to be few redds/yr.	Medium	Document progress by evaluating escapements since the policy was developed to evaluate the program.		No Redds were observed in the past 5 years while on average more than 80% fish removed, allowing only 20% NOR fish to spawn. This has not resulted in redds since 2007

## ***H-Integration***

**Hypothesis:** The management of each H is coordinated in such a way that they work synergistically to support recovery of salmonids in the basin, under NOAA's VSP framework.

**Strategy/Approach:** Management within each H is already coordinated to some degree with the other H's, as indicated in the above sections. Completion of the monitoring and adaptive management plan, currently under development in coordination with the RITT and PSP, will enhance this integration. Ultimately, the question for understanding our progress towards salmon recovery is: *What is the cumulative effectiveness of all our actions? and: What is the relative effect of habitat, harvest, and hatchery management on our ability to reach our goal?* Our ability to answer this question will depend on information about resource status over time (such as spawning escapement and juvenile outmigration abundance) and information that enables us to draw relationships between management actions and fish response.

**Sequence/Timing:** In this 3-year work plan, cross-H considerations are more explicitly identified, illustrating that resource managers in the different H sectors are aware of general H-integration issues. At this point, we are not able to prioritize or sequence across the H's, nor evaluate resource allocation across the Hs. This type of undertaking might be a valuable analysis for the Snohomish basin; however, with other work seriously underfunded, we are unlikely to advance this type of analysis at this time until additional funding is allocated for this purpose.

Basic stock assessment activities are the key to evaluating the efficacy of the strategies in all of the H's. Spawning escapement programs that facilitate harvest management are being refined, but were not originally designed, to assess the spatial distribution of spawners in a manner that can be correlated with habitat type and condition. GIS mapping of spawning distribution could assist this and is a desirable item to work toward, but funding is limited, though there are already GPS coordinates for the area. Similarly, juvenile outmigrant assessment programs that are used to predict subsequent adult returns to facilitate harvest management also serve as a basis for estimating freshwater, marine, and overall survival and particularly to assess trends in freshwater productivity over time and the ability of freshwater habitat to produce viable outmigrant smolts. The breakout of the natural spawning escapement into natural- and hatchery-origin components provides information on the relative abundance trends of hatchery and natural-origin fish necessary to evaluate the efficacy of the hatchery program and potential demographic, ecological and genetic risks it may pose to natural populations, but it also allows us to document time trends in natural population abundance, productivity (NOR adult replacement rates), and spatial distribution of natural- and hatchery-origin fish. A remaining, missing piece in overall stock assessment is the need to document trends in life history diversity, which could be ascertained through otolith pattern analysis, scale pattern analysis, or a combination of these imaging methods. Overall, the stock assessment work is the bottom line needed to assess overall performance of the recovery plan.

**Summarized 3-Year Outcomes:** Over the next two years (2013-2014), the monitoring subcommittee of the Technical Committee will work with the RITT and PSP to advance and complete the watershed's monitoring and adaptive management plan. Additional discussion of this work is included in the final section (III – Plan Gaps) of this 3-year work plan update.

Currently, information collected to inform harvest management decisions provides an important dataset to allow us to understand the cumulative impact of H-management over time. Annual estimates of natural spawning escapement are completed by WDFW and the Tulalip Tribes, with Snohomish PUD contributing to surveys on the Sultan River, using a combination of aerial, boat, and foot surveys of redds throughout the basin. The redd counts are expanded by an assumed ratio of 2.5 fish per redd and added to the number of adult Chinook passed above Sunset Falls to derive the Snohomish Chinook escapement estimate each year. Since 1997, the spawning escapement estimates have been partitioned into natural- and hatchery-origin components by sampling spawned-out Chinook carcasses recovered throughout the basin. All regional hatchery Chinook production is marked through a combination of marks and/or tags and the proportion of hatchery fish in the natural spawning escapement each year is estimated through the recovery of thermally-marked otoliths, coded-wire tags, and/or missing adipose fins in the sampled carcasses while unmarked and untagged Chinook are assumed to be of natural origin. Natural-origin juvenile out-migrant abundance has been estimated annually since 2001 using traps in the lower Skykomish and Snoqualmie Rivers with new trapping initiated in 2012 in the Sultan River.

In addition, there are several projects on the work plan that explicitly cross H's. Integrating hatchery and habitat management include the estimation of the presence of hatchery-origin adult Chinook on the spawning grounds in different habitats throughout the system as well as the artificial passage of Chinook in the south fork Skykomish River above Sunset Falls into otherwise inaccessible habitat. Hatchery plans include integrated modeling of habitat, harvest and hatchery actions and scenarios. Harvest and hatchery integration also includes time-area selective fishery management of Tulalip tribal fisheries that target hatchery production in Area 8D (Tulalip Bay) with high precision and through selective recreational fisheries in Port Gardner – Saratoga Pass area (Area 8A) and in the Skykomish River when hatchery-origin Chinook are transiting those areas.

**Funding:** Spawning escapement estimation is funded by WDFW and Tulalip operational funds that has been increasingly supplemented by grant awards (e.g., Hatchery Reform, BIA ESA Program, Tribal Wildlife Grant, Mass Marking Implementation, and PSC Sentinel Stock and US-Canada funding). The breakout of natural- and hatchery-origin fish is funded mainly through Hatchery Reform funds competed for annually by the Tulalip Tribes, with in-kind contributions from Tulalip Tribe's and WDFW operational funds. The certainty of future Hatchery Reform and other sources of grant funding remaining available for this purpose is questionable, with significant cuts enacted in recent years (e.g. >50% cut in tribal Hatchery Reform funding in 2012). Juvenile outmigrant smolt trapping operations have been funded annually through Coastal Salmon Recovery funds granted to the Tulalip Tribes. Completion of the monitoring plan will also yield a more complete cost picture.

**Changes between 2012 and 2013:** These programs have not changed substantially between 2012 and 2013. However, additional detail about these programs was added in 2013 to the table which tracks Pace/Status of H-integration in the basin. In this work plan, we attempt to draw greater attention to projects and activities that have cross-H implications.

**Pace/Status:** Table 12 below provides more information on the H-integration elements for the 3-year work plan.

Table 12: H - Integration				Priority (High, Medium, Low)	3-Year Outcome Needed to be on Track in 3 yrs?	Work Plan Meets this Need?	Changes from previous years
	Quantifiable Goal	Information about Progress	Currently on Target to Meet Benchmark?				
<b>All-H:</b> Adult Natural spawning escapement - Adults	<p>1) <b>Abundance:</b> Spawning escapement is increasing toward the recovery goal, 2) <b>Productivity:</b> Recruits per spawner; is increasing toward recovery goal 3) <b>Spatial Distribution:</b> Escapement remains balanced among spawning aggregations in the subwatersheds; 4) <b>Diversity</b> - Maintain life history and genetic diversity.</p> <p>Balance of yearling/subyearling life history strategies does not change significantly, return and spawn timing is preserved, genetic diversity is maintained.</p>	<p>Demographic and genetic data is being collected to help assess all 4 parameters for natural- and hatchery-origin fish. This information is available through annual reports and data sets. 1) <b>Abundance:</b> Annual estimates of NOS spawning escapement, 2) <b>Productivity:</b> Recruits per spawner (adult replacement rates and smolts/spawner or per female). 3) <b>Spatial Distribution:</b> annual estimates of spawning abundance by subwatershed 4) <b>Diversity:</b> Balance of yearling and subyearling life history types from scale analysis of spawners, smolts, and spawner-recruit analysis.</p>	<p>Spawning escapements have decreased since 2004 after moderate increases during the late-1990s to early 2000s (2001 for Snoq, 2004 for Sky and basin), due to a number of factors, including significantly reduced marine survival. Trend analyses need to be updated and survival partitioned between freshwater and marine residency.</p> <p>While no obvious trends in life history types/diversity or spatial distribution have been identified, studies are needed and no formal analysis has been conducted. Data is collected for carcass locations only.</p>	High	High interannual variability makes short trends (3 years) problematic. However, trends should be increasing in order to meet recovery goals for all 4 viability parameters, particularly over longer periods.	Yes, except for the need to analyze data on spatial distribution and life history types	This has changed to address all adult natural spawner VSP parameters in the work plan. In previous years, the plan focused more on abundance. Looking across all VSP parameters provides a more robust way of describing progress toward overall recovery goals.
<b>All H:</b> Outmigration monitoring	<p>1) <b>Abundance:</b> Juvenile out-migrant numbers are increasing toward recovery goal; 2) <b>Productivity:</b> Juveniles per spawner are increasing toward recovery goal, 3) <b>Spatial Distribution:</b> Juvenile spatial-temporal habitat use is increasing, 4) <b>Diversity:</b> Yearling and subyearling life history types are increasing and preserving balance, outmigration timing is preserved.</p>	<p>Annual estimates of NOR outmigrants from Skykomish and Snoqualmie populations: integrated freshwater (smolt trapping and hatchery releases), estuarine, nearshore and offshore marine sampling program.</p> <p><i>(see freshwater outmigrant smolt trap report recently completed by the Tulalip Tribes)</i></p>	<p>Some relevant data analysis is underway. This analysis must integrate regional juvenile sampling with the Sea Grant intensive coordinated regional monitoring plan; a component of the overall Salish Sea Marine Survival Monitoring Plan that is currently under development (2013).</p> <p>Otolith samples have been collected in the estuary for 10 years but may not be sufficient. Existing samples need to be analyzed to delineate life history types, temporal-spatial habitat use.</p>	High	Understanding and partitioning freshwater habitat capacity and productivity from marine productivity will require an assessment of the expected production from current habitat plus restored habitat. Current analysis of juvenile out-migrant information is a start toward this as is integration with estuarine and marine monitoring in the Salish Sea Marine Survival Monitoring Plan.	Yes, except for updated analysis of the expected production from current habitat plus restored habitat. An updated EDT or similar analysis would be required for that.	This has changed to address all juvenile VSP parameters in the work plan.. In previous years, the plan focused more on abundance. Looking across VSP parameters provides a more robust way of describing progress toward overall recovery goals. Outmigrant monitoring has improved by beginning to integrate with the larger Salish Sea Marine Monitoring Plan under development.
<b>Habitat and Hatchery:</b> Distinguish hatchery- and natural-origin fish to better integrate management.	<p>Hatchery fish are 100% marked through adipose fin clipping, and/or coded wire tagging, and/or thermal otolith marking (at Tulalip with plans to initiate thermal marking at Wallace River Hatchery).</p>	<p>Differential marking (otoliths, CWTs) enables co-managers to distinguish hatchery fish contribution and straying rates by origin and brood year and evaluate potential effects to natural populations for each hatchery.</p> <p>* 100% of hatchery fish are marked and/or tagged as of 1999; * 100% of Tulalip hatchery fish are differentially marked with plans to otolith mark Wallace River Hatchery fish effective with the 2013 broodyear.</p>	<p>Yes, annual marking and monitoring programs are in place assuming funding is secured to install and annually operate Wallace River Hatchery chillers.</p>	High			Wallace River Hatchery otolith marking is being added in 2013 (dependent on funding). This update provides a bit more explanation on why differential marking for origin, location, brood year, etc is used to identify contribution (escapement) and straying (from hatcheries) rates of hatchery fish to inform management decisions.
<b>Habitat and Hatchery -</b> Hatchery programs should not limit the primary recovery goal of natural stock management..	<p>Hatchery programs do not reduce the ability of current habitat to produce natural-origin fish, (e.g. by the removal of too many natural or hatchery-origin fish from the natural environment, masking true status of the natural population, etc.)</p>	<p>Natural-origin fish are distinguished from hatchery fish to prevent masking of the true status of the natural population.</p> <p>Modeling of current programs relative to the other Hs has been conducted (e.g. AHA, HGMPs)</p>	<p>Initial modeling underlying the current hatchery plan predicts that this will not happen. Modeling should be improved and data are being collected to test this but need to be analyzed.</p>	High	Uncertain	Appropriate data are being collected. Need to specify the necessary data analysis and provide resources to do that.	Newly added to the table, this information helps assess how hatchery operations, harvest, and habitat scenarios may interact to affect viability and recovery goals.
<b>Harvest and Hatchery:</b> Target hatchery fish in harvest as appropriate.	<p>Selective fisheries, including time-area management and mark-selective fisheries actually result in higher harvest rates on hatchery fish than on natural-origin fish.</p>	<p>* Preseason forecasts show that this has been working over the past several years for the Snohomish terminal area. * Post-season assessment corroborates this in the terminal areas. * Post-season FRAM analysis to document this for all fisheries is still not complete.</p>	Yes	High	Maintain status quo. Successfully target hatchery fish surplus to production while also providing sufficient escapement of hatchery fish to meet production goals.	Yes	Provides additional information about progress in harvest management, integration of harvest management with hatchery escapement goals and the analysis that supports the assertion that harvest is adequately targeting hatchery-origin fish.

**Habitat and Hatchery:**  
Pass fish above Sunset Falls to otherwise inaccessible habitat.

Pass all fish reaching the Sunset Falls fish trap less the limited number taken for hatchery broodstock integration.

Number and proportion of fish passed/not passed annually.

To ensure that all viability parameters are addressed and recovery goals will not be impeded, modeling was done in the Wallace River Hatchery HGMP to address broodstock collection from natural spawning areas (for the purposes of increasing productivity, preserving genetic diversity)

Yes, this was modeled using EDT and a simple simulation analysis that suggested that natural spawning above Sunset Falls would equilibrate well above the current conditions. Removals for broodstock integration also address spatial distribution (limited to one location: Sunset Falls) and were modeled to set removal limits; addressing abundance (removal numbers and proportions) and life history diversity of the naturally spawning aggregation above the falls.

Not assigned

Yes \*

More modeling has been completed since previous years but this should be improved. Monitoring of the area above Sunset Falls (e.g. adult and redd surveys, juvenile outmigration, ecological interactions of species, etc.) should be conducted to better understand habitat usage of the area. Conversations suggests that it would be beneficial to host some discussion about how to manage area above the falls (e.g. years of high pink runs it may not be desirable to pass all above falls for our recovery goals, etc.). Potential hydropower proposals and importance of trapping operation/facility should be discussed.

## Section III - Plan and Gaps

*Q1: What are the obstacles or barriers for implementing monitoring and adaptive management? Where could you use support for development of your M&AM plans?*

- One barrier to advancing the monitoring and adaptive management work in the Snohomish Basin has been the lack of consistent leadership and direction from NOAA and regional entities (Shared Strategy, PSP, PSSRC) and lack of a clear timeline and urgency to complete this. Recent movements to provide such direction from the Puget Sound Partnership have helped, yet it is still unclear how NOAA's work on VSP monitoring may be connected to this effort, and how the broader Puget Sound monitoring work is developing in parallel to the watershed plans. The Snohomish Salmon Recovery Forum is eager to utilize what direction is provided and move this ahead.
- Along with the lack of a coordinating policy framework for monitoring, there has been a lack of technical guidance on prioritizing and designing monitoring programs. The watershed scale programs will be constrained in how many parameters they monitor, yet there is little guidance on what are the most importance or essential elements from a regional (ESU de-listing) perspective. Neither has it been made clear which regional or state level programs the watersheds can rely on to answer certain questions and avoid un-necessary duplication.
- At the same time, the watershed has struggled to bring staff resources to bear, for example to complete its own monitoring and adaptive management plan. A part of this is due to the lack of direction and a clear path forward, but key participating jurisdictions have prioritized focus away from the monitoring and adaptive management plan development to other aspects salmon recovery work due to capacity limitations and lack of clear priority for this work.
- Within the participating jurisdictions, there continues to be uncertainty about the resources that will be available to conduct monitoring and to analyze its results. On the one hand, there may be important ongoing monitoring elements, such as stormwater or forest practices, that are not participating directly in the salmon recovery effort. On the other, it is unclear whether programs such as critical areas implementation monitoring will be funded over the long term and can be adapted to support salmon recovery decisions.
- Consideration of the different types of monitoring is important to gage efficacy and track status of salmon recovery. Considering compliance or implementation monitoring, for example, there has been a reluctance by local jurisdictions to monitor land use regulatory actions or to share the results. The salmon recovery effort has limited capacity to promote and carry out this sort of monitoring independently.
- Data sharing and analysis has also been a problem. The watershed does not have a good system of archiving and making scientific studies and monitoring data readily accessible.

***Section III - Q2: Considering all actions affecting salmon recovery in the watershed, Is the Chinook salmon resource likely to be closer to, or further from, the recovery goals ten years from now as it is today?***

The Snohomish Basin salmon recovery plan implementation effort is significantly behind schedule, thus likely putting the basin further from our recovery goals ten years from now than we are today. For example, unless investment in habitat restoration for salmon recovery is significantly increased, implementation of the 10-year plan will take 30 years, seriously impeding the recovery process and reducing the likelihood that the Forum's attempt at using resiliency to mitigate some of the effects of climate change would be operative. In addition to funding constraints there are a number of obstacles to implementing the Plan as have been highlighted in previous 3-year work plan updates. For more information on each of these please refer to the 2012 update.

- Funding the habitat, hatchery and harvest actions necessary to achieve recovery
- Challenges associated with the scale of restoration that is needed to achieve our recovery goals including – insufficient funding and grant cycles that do not reflect the timeline of restoration projects; capacity of project sponsors in the basin to implement increasingly complex restoration projects; the loss of institutional knowledge about salmon recovery as key players retire or leave the basin
- Addressing the increasing concern around capital projects related risk (to infrastructure, or health and safety) and liability of these projects
- Public support for salmon recovery
- Balancing societal priorities in the basin including – For example, agricultural preservation and habitat restoration, Large woody debris and boater safety, etc.
- Further clarification on integration and ecosystem based recovery vs. species specific recovery plans
- How to track and support mitigation projects

***Salmon Population Status and Trends:*** One potential way to track or measure whether or not we will be closer to or further from our recovery goals is to look at salmon population status and trends over time. Currently escapement data provides some indication of population performance. However, escapement only provides us with one view of population performance. Work is underway to extend this analysis to brood year production for the Snohomish. A better understanding of juvenile survival will also be critical for understanding trends in overall population performance. The results from the Snohomish Basin smolt trap data may help to inform trends in juvenile survival. This information was compiled in 2012 for the past 8 years and is available at from the Tulalip Tribes.

Following the decline in harvest rates of the mid-1990s, natural spawning escapement increased (Fig. 1), although it has begun to show a strong odd-even year fluctuation and a decline since the peak year of 2004. This graph also shows proportion of escapement by Skykomish and Snoqualmie populations. Another way of looking at population is by assessing the proportion of HOR and NOR's returning to the spawning ground by each population. Figures 2 and 3 provide some information on this by population starting from year 1997, though there is not data for every year between then and now. Finally, another way to assess status of the population is a comparison of the distribution of fishing

mortality and escapement under the 2007 and 2009 pre-season fishing plans shows the expected gain from implementing the new Chinook annex in the Pacific Salmon treaty (Fig.4).

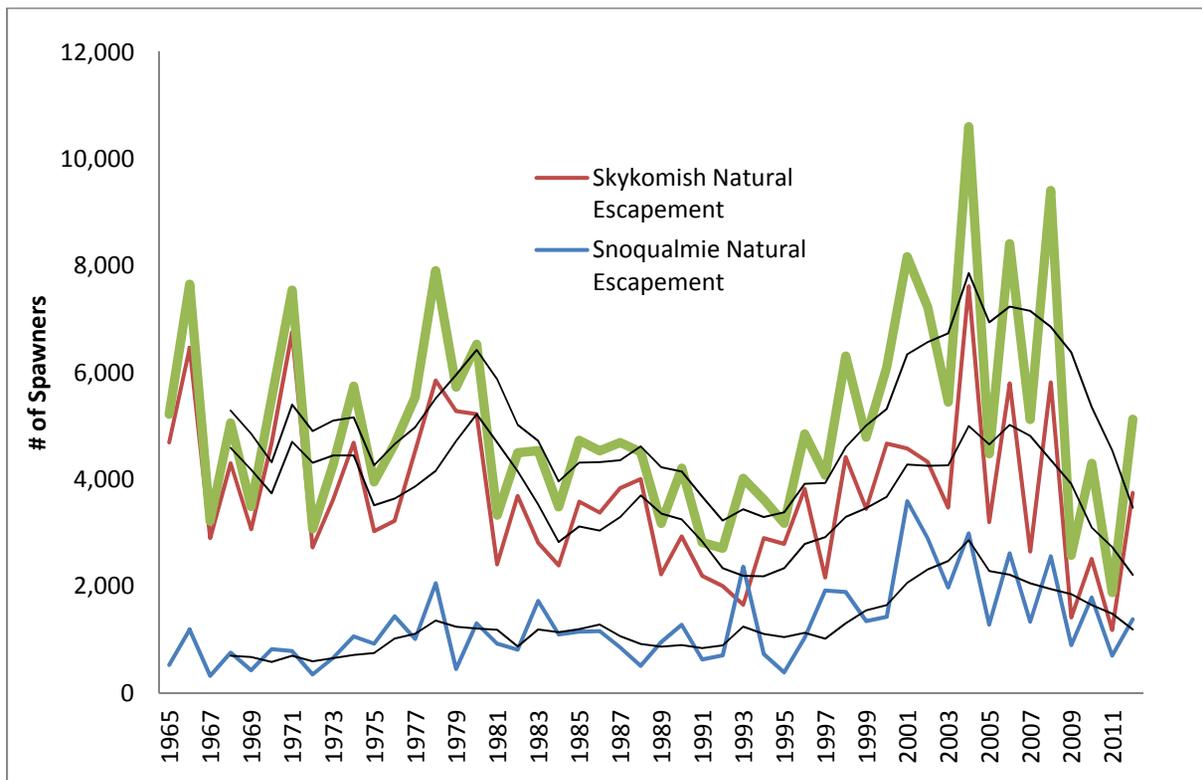


Figure 1. Trend in natural spawning escapement for Snohomish Chinook salmon 1965-2011. Black lines represent the 3 year moving average for overall, Skykomish, and Snoqualmie natural escapements.

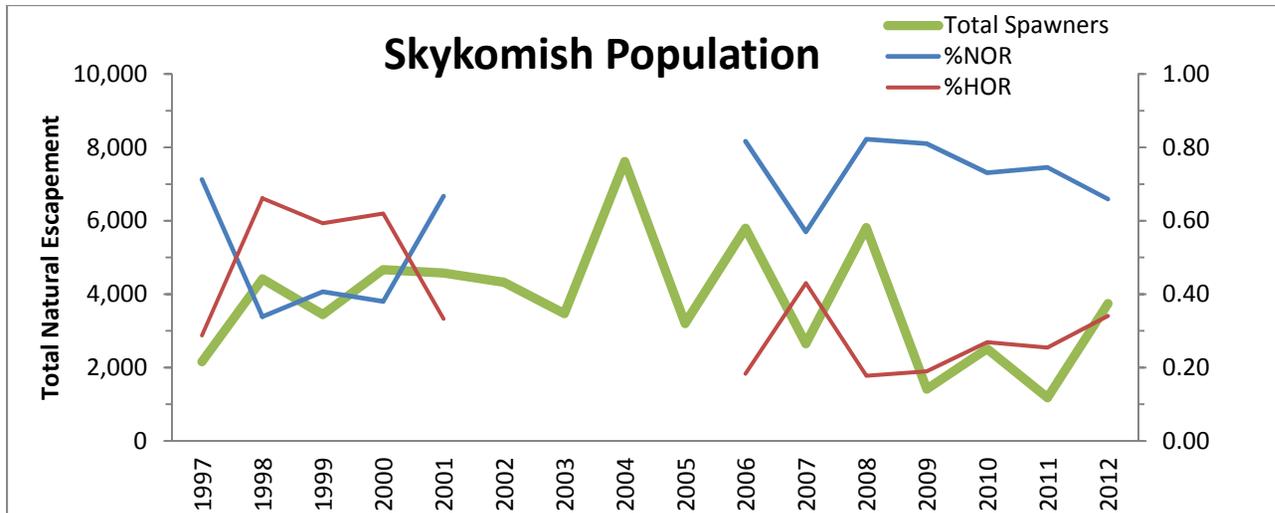


Figure 2: % NOR/HOR in the Skykomish population. Note, at this time it is not possible to determine 1) the HOS/NOS fractions prior to return year 1997 due to lack of 100% marking and tagging of hatchery releases and hatchery/natural carcass sampling of escapements. 2) the HOS/NOS fractions for the Skykomish population or the basin from 2002-2004 due to unmarked Wallace River Hatchery subyearling Chinook releases that occurred annually through broodyear 1999 (release year 2000) affecting return years 2002-2004. 3) the HOS/NOS fractions for the Wallace River, the Skykomish population, or the basin due to no HOS/NOS sampling in the Wallace River in 2005.

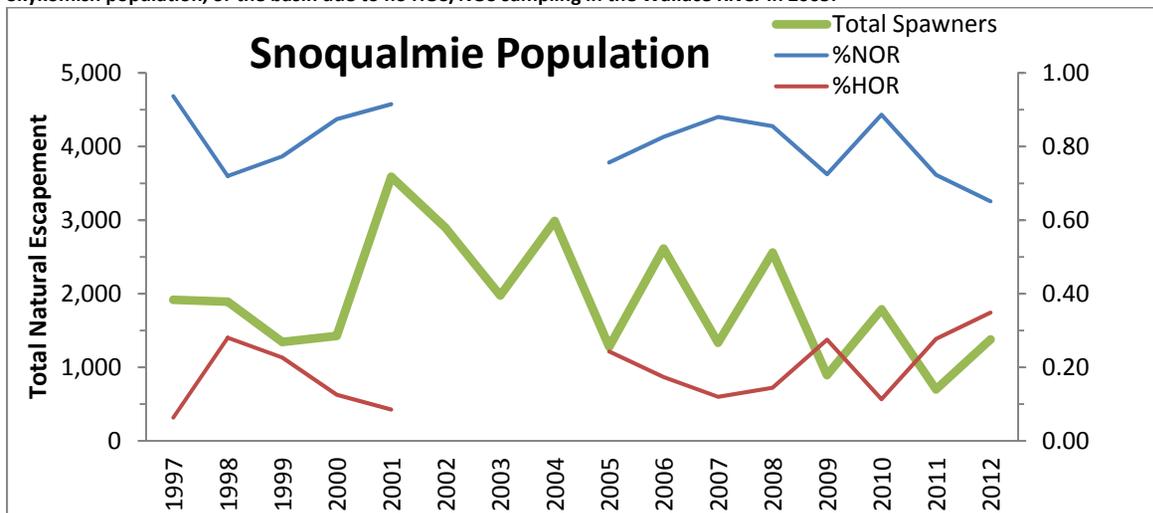


Figure 3: % NOR/HOR in the Snoqualmie population. Note, at this time it is not possible to determine 1) the HOS/NOS fractions prior to return year 1997 due to lack of 100% marking and tagging of hatchery releases and hatchery/natural carcass sampling of escapements. 2) the HOS/NOS fractions for the Skykomish population or the basin from 2002-2004 due to unmarked Wallace River

Hatchery subyearling Chinook releases that occurred annually through broodyear 1999 (release year 2000) affecting return years 2002-2004. 3) the HOS/NOS fractions for the Wallace River, the Skykomish population, or the basin due to no HOS/NOS sampling in the Wallace River in 2005.

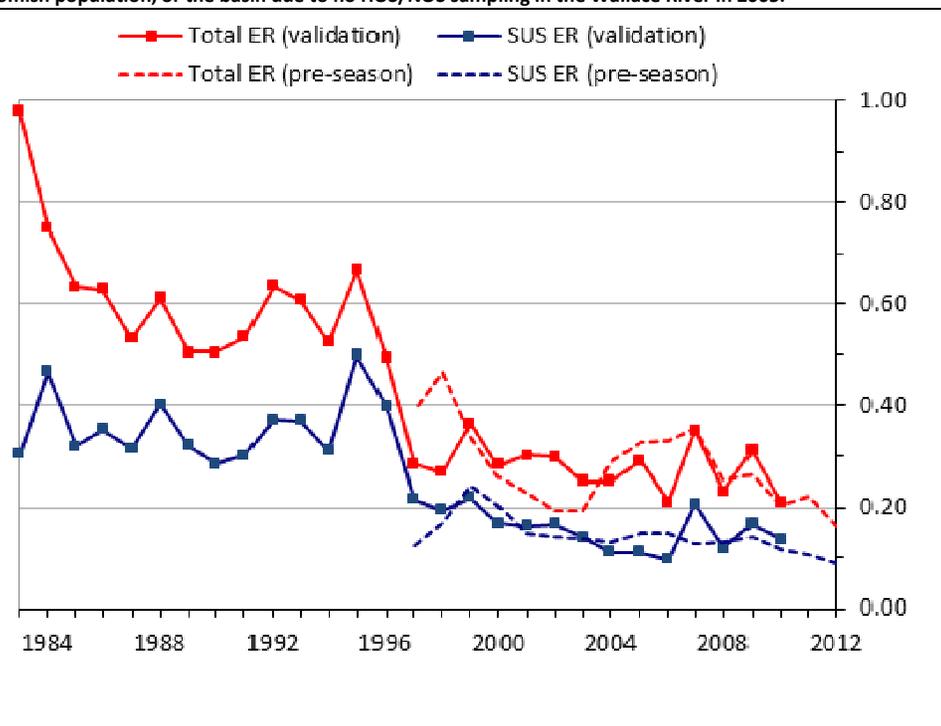


Figure 4. Trend in exploitation rates on Snohomish basin Chinook salmon as measured by the FRAM model, 1983-2012. Red line (“Total”) is total exploitation rate, blue line (“SUS”) is the portion of this south of the US/Canada border. Solid lines are post-season estimates; dash lines are preseason predictions.

**Habitat Trends:** Another measure to track our progress toward recovery could be habitat status and trends. At this time we are unable at this time to identify habitat trends; however, some habitat trend data from several reports highlights that the general trend in habitat is toward losses (NWIFC, 2011; NMFS, 2011; WDFW/Pierce, 2011). This information needs further analysis to look at potential shortcomings of the data to prevent misuse of the data. Despite this need for analysis, partners in the basin are aware of the need for greater emphasis on habitat protection and are engaged locally in refining our habitat protection strategy as well as at the region with PSP. Riparian analyses appear to indicate that we will need to increase the riparian restoration need in the basin to meet our 10-year end targets.

Given difficulties in habitat trend detection, annually is not the appropriate spatial scale to track habitat change. Thus, adaptive management decisions to direct restoration efforts will be imperfect and rely heavily on project implementation information. The Technical Committee is currently addressing habitat trend monitoring through the cumulative effectiveness section in the WRIA 7 monitoring plan (in progress).

## Appendix A: Subbasin Strategy Group Definitions

The 62 sub-basins in the Snohomish River basin plus the nearshore were organized into 12 strategy groups based on three characteristics:

**1. Basin location.** The five major classifications are nearshore, estuary, mainstem rivers, lowland tributaries, and headwaters. This classification system is useful in developing a restoration strategy because sub-basins within these groups play similar roles in supporting salmon life histories and have similar geomorphic characteristics and land use issues.

**2. Condition of watershed processes.** Watershed processes drive habitat conditions and, in turn, population performance. The root causes of habitat loss occur on a sub-basin scale. Addressing the root causes of habitat degradation is critical for a successful recovery strategy. Watershed process conditions analyzed and modeled include the current conditions of hydrology, sediment, and riparian processes.

**3. Salmonid use.** Sub-basins were grouped based on their current Chinook and bull trout use and potential use. Salmonid populations are not distributed uniformly across the landscape. Identifying areas of high and potential use helps to direct scarce resources to where they will have the greatest effect. Sub-basins that have high and moderate coho use are identified in each strategy group. Many sub-basins include focus reaches where recommended actions may be targeted.

Sub-Basin Strategy Group	Salmonid Use/Watershed Condition
Nearshore	High use/Moderately degraded
Estuary	High use/Degraded
Mainstem Primary Restoration	High use / Moderately degraded or degraded
Mainstem Secondary Restoration	Moderate use / Moderately degraded
Rural Streams - Primary Restoration	Moderate use / Moderately degraded
Rural Streams - Secondary Restoration	Low use / Moderately degraded
Urban Stream Restoration	Low use / Degraded
Headwaters - Primary Protection	High use / Intact
Headwaters - Secondary Restoration	Moderate use / Moderately degraded
Headwaters - Secondary Protection	Low use / Intact
Headwaters - Protection Above Natural Barriers	Resident population only / Intact
Headwaters - Protection Above Falls and Dams	Resident population only / Moderately degraded

### Appendix B: Plan Tiering Criteria for Habitat Capital Actions

Tiering criteria was established *Plan*. Each individual project was tiered into 1 of 4 levels according to the priority action outlined for the sub-basin strategy group where the project is located.

Priority Actions by Sub-Basin Strategy Group				
	Tier 1	Tier 2	Tier 3	Tier 4
11.4 Nearshore (pg 11-7)	<ul style="list-style-type: none"> <li>• Preservation</li> <li>• Restoring shoreline condition</li> <li>• Restoring sediment process</li> <li>• Riparian enhancement</li> </ul>	<ul style="list-style-type: none"> <li>• Protecting and/or restoring water quality</li> <li>• Control invasive species</li> <li>• Spaces between habitats protected to allow migration</li> </ul>		
11.5 Estuary (pg 11-19)	<ul style="list-style-type: none"> <li>• Preservation</li> <li>• Reconnect off-channel habitats</li> <li>• Improve fish passage and tidal exchange on tide-gated streams entering the estuary</li> <li>• Restore shoreline conditions</li> <li>• Riparian enhancement</li> </ul>	<ul style="list-style-type: none"> <li>• Address water quality impacts</li> <li>• enhance instream structures</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce log raft storage that ground on mudflats</li> </ul>	
11.6 Mainstem - Primary Restoration (11-28)	<ul style="list-style-type: none"> <li>• Preservation (along focus reaches)</li> <li>• Preservation to support hydrologic and sediment processes</li> <li>• Removal of human-made instream barriers along or adjacent to priority reaches</li> <li>• Reconnection of off-channel habitats</li> <li>• Restoration of shoreline conditions</li> <li>• Restoration of hydrologic and sediment processes (for peak flow and base flow)</li> <li>• Riparian enhancement</li> </ul>	<ul style="list-style-type: none"> <li>• Addressing water quality impacts</li> <li>• Enhancing instream structural components</li> </ul>	<ul style="list-style-type: none"> <li>• Replace blocking culverts on small Coho-bearing streams</li> </ul>	

11.7 Mainstem - Secondary Restoration (11-50)	<ul style="list-style-type: none"> <li>• Preservation to support hydrologic and sediment processes</li> <li>• Restoring hydrologic and sediment processes (for peak flow and base flow)</li> </ul>	<ul style="list-style-type: none"> <li>• Preservation along focus reaches</li> <li>• Removing human-made instream barriers along or adjacent to priority reaches</li> <li>• Restoring shoreline conditions</li> <li>• Enhancing riparian areas</li> </ul>	<ul style="list-style-type: none"> <li>• Addressing water quality impacts</li> <li>• Enhancing instream structural composition</li> </ul>	<ul style="list-style-type: none"> <li>• Replacing culverts on small streams</li> </ul>
11.8 Rural Streams - Primary Restoration (11-57)	<ul style="list-style-type: none"> <li>• Preservation to support hydrologic and sediment processes</li> <li>• Restoration hydrologic and sediment processes (for peak flow and base flow)</li> </ul>	<ul style="list-style-type: none"> <li>• Preservation along focus reaches</li> <li>• Removing human-made instream barrier along or adjacent to priority reaches</li> <li>• Restoring shoreline conditions</li> <li>• Riparian enhancement</li> </ul>	<ul style="list-style-type: none"> <li>• Addressing water quality impacts</li> <li>• Enhancing instream structural composition</li> </ul>	<ul style="list-style-type: none"> <li>• Replacing culverts on small streams</li> </ul>
11.9 Rural Streams - Secondary Restoration (11-60)	<ul style="list-style-type: none"> <li>• Preservation to support hydrologic and sediment processes</li> <li>• Restoring hydrologic and sediment processes (for peak flow and base flow)</li> </ul>	None	<ul style="list-style-type: none"> <li>• Preservation (along focus reaches)</li> <li>• Removing human-made instream barriers along or adjacent to priority reaches</li> <li>• Restoring shoreline conditions</li> <li>• Riparian enhancement</li> <li>• Addressing water quality impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Enhancing instream structure</li> <li>• Replacing culverts on small streams</li> </ul>
11.10 Urban Streams - Restoration (11-64)	None	None	<ul style="list-style-type: none"> <li>• Preservation (along focus reaches)</li> <li>• Removing human-made instream barriers along or adjacent to priority reaches</li> <li>• Restoring shoreline conditions</li> <li>• Riparian enhancement to increase shade, large woody debris recruitment, and to buffer streams against water quality and urban impacts</li> <li>• Addressing water quality impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Instream structural enhancement</li> <li>• Implement effective stormwater controls and other BMP's</li> <li>• Protect wetlands</li> </ul>
11.11 Headwaters Sub-Basin Strategy Group Overview (pg 11-69)				

11.12 Headwaters - Primary Protection (11- 73)	<ul style="list-style-type: none"> <li>• Preserving habitat along focus reaches</li> <li>• Preserving habitat to support hydrologic and sediment processes</li> <li>• Restoring shoreline conditions</li> </ul>	<ul style="list-style-type: none"> <li>• Enhancing marine-derived nutrients</li> </ul>		
11.13 Headwaters- Secondary Restoration (11-75)	<ul style="list-style-type: none"> <li>• Preserving hydrologic and sediment processes</li> <li>• Restoring hydrologic and sediment processes (for peak flow and base flow)</li> </ul>	<ul style="list-style-type: none"> <li>• Preservation (along focus reaches)</li> <li>• Removing human-made instream barriers along or adjacent to priority reaches</li> <li>• Reconnecting off-channel habitats</li> <li>• Restoring shoreline conditions</li> <li>• Enhance riparian habitat</li> </ul>	<ul style="list-style-type: none"> <li>• Addressing water quality impacts</li> <li>• Enhancing marine-derived nutrients</li> <li>• Enhancing instream structure</li> </ul>	<ul style="list-style-type: none"> <li>• Replacing culverts on small streams</li> </ul>
11.14 - Headwaters - Secondary Protections (11-78)	<ul style="list-style-type: none"> <li>• Preserving hydrologic and sediment processes</li> </ul>		<ul style="list-style-type: none"> <li>• Preservation along focus reaches</li> <li>• Remove human-made instream barriers along or adjacent to priority reaches</li> <li>• Reconnect off-channel habitats</li> <li>• Restore shoreline conditions</li> <li>• Address water quality impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Replacing culverts on small streams</li> </ul>
11.15 Headwaters - Protection Above Natural Barriers (11-81)				
11.16 Headwaters - Restoration above falls and dams (11-84)	<ul style="list-style-type: none"> <li>• Preservation to support hydrologic and sediment processes</li> <li>• Restore hydrologic and sediment processes (for peak flow and base flow)</li> </ul>	None	<ul style="list-style-type: none"> <li>• Riparian enhancement</li> <li>• Protect water quality</li> </ul>	<ul style="list-style-type: none"> <li>• Removing human-made instream barriers</li> <li>• Restoring shoreline conditions</li> <li>• Instream structure (5th Tier)</li> </ul>

## Appendix C: 3-Year Work Plan Sequencing Scheme for Habitat Capital Actions

As part of the 3-year work plan update, we applied a simple categorization scheme to identify the highest priority actions needed given priorities established by the *Plan* (2005), current progress towards 10-year benchmarks, and the considering sequencing issues and sponsor capacity. The intent of this process is not to judge the merit of each project in the work plan but rather to provide general guidance about the types of restoration action most needed and reflect the ability to advance these projects in light of project readiness. The naming convention of our categorization scheme underscores that all of the proposed actions are needed to reach salmon recovery. However, the need for some projects types, particularly given implementation progress to date, is critical.

### 1. Tier assigned by the *Plan*

- a. Tier 1: +85 points
- b. Tier 2: +75 points
- c. Tier 3: +65 points
- d. Tier 4: +55 points

### 2. Sponsor capacity

- a. Sponsor currently has capacity to advance project: 0 points
- b. Sponsor currently lacks capacity to advance project : -10 points

### 3. Habitat action addresses lagging 10-year benchmark (see table 2, p. 12, percent 10-year benchmark column)

- a. < 25%: +10 points
  - nearshore beach
  - mainstem primary off-channel
  - mainstem primary edge
  - mainstem secondary riparian
  - mainstem secondary off-channel
  - rural primary off-channel
  - rural secondary off-channel
  - protection evaluation
- b. 26 – 50%: +5 points
  - estuary marsh
  - rural primary riparian
  - urban riparian

- c. > 50%: 0 points
  - mainstem primary riparian
  - rural secondary riparian
  - urban off-channel

4. **Logical Sequencing Considerations**

- a. Logical sequencing issue: -10 points

*Examples:*

- downstream fish blockage
- project does not address primary limiting factor
- implementation of project may impede more substantial restoration in the future

- b. Project informed by larger scale or process assessment: +5 points

Points were summed for each project, and scores ranged from 55-100. Project scores were then binned as follows:

- 90 – 100 points: *Most pressing need*
- 70 – 89 points: *Pressing need*
- < 70 points: *Need*

### Appendix D: Completed Projects 2012 and 2013

The following table is not meant to be a comprehensive list of all projects completed during this time frame. These represent projects that are completed according to the information provided to the Lead Entity in the Habitat Work Schedule 3-year work plan export tool and in conversations with project sponsors. There are likely many other smaller projects that benefit fish that are not included or tracked for the purposes of the 3-year work plan. In the future the Snohomish Basin is hoping that the RITT adaptive management and monitoring framework will help to further define what information and projects to track for ongoing implementation monitoring.

Project Name	HWS ID	YR	Sub Basin Strategy Group	Project Performance	Sponsor	Total Cost of Project
<b>Fish Passage Barrier Prioritization (Phase I)</b>	07-BW-003	2012	Basin wide	Mapping system developed	Wild Fish Conservancy	\$104,058
<b>Ebey Island Feasibility, Acquisition, and Restoration</b>	07-ER-033	2012	Estuary Restoration	prepare additional delta acreage for restoration to tidal functions if the Lead Entity's study at the 10-year point of the Salmon Conservation Plan concludes that more restoration is needed	Washington Department of Fish and Wildlife (WDFW)	\$10,000,000
<b>Smith Island/Union Slough Estuarine Habitat Restoration</b>	07-ER-003	2012	Estuary Restoration	93 acres intertidal riverine habitat (35 restoration; 58 mitigation)	City of Everett	\$ 10,200,000
<b>Wetland Enhancement and Community Outreach – North Bend</b>	07-HRA-029	2012	Headwaters Above Falls and Dam	1 fish barrier removed 1 acre riparian	Sound Salmon Solutions	\$41,445
<b>Harlan Creek Road Obliteration</b>	07-HSR-020	2012	Headwaters Secondary Restoration	Obliteration of up to 10 miles of logging roads on steep, unstable slopes adjacent to Harlan Creek, a salmon-bearing tributary to the Beckler River.	Mt. Baker-Snoqualmie National Forest	\$385,000

<b>Snoqualmie Riparian Restoration with Salmon-Safe Farms</b>	07-MPR-308	2012	Mainstem Primary Restoration		Stewardship Partners	\$319,960
<b>Barclay Creek Stringer Bridge Removal</b>	07-MSR-035	2012	Mainstem Primary Restoration	remove a failing log stringer bridge on Forest Service Road 6024-510.	Mt. Baker-Snoqualmie National Forest	\$15,704
<b>Maloney Creek Restoration I</b>	07-MPR-364	2012	Mainstem Primary Restoration	Maloney Creek Restoration will involve three parts: (1) wetland creation; (2) construction of sediment detention ponds; (3) in stream restoration.	Mt. Baker-Snoqualmie National Forest, Skykomish, Town of	\$500,000
<b>Cherry Valley Stream Restoration</b>	07-MPR-315	2012	Mainstem Primary Restoration	66 acres riparian planting along stream re-meander; re-meander Rasmussen Creek;	Ducks Unlimited - Vancouver	\$ 615,000
<b>Lower Skykomish River Restoration Assessment and Design</b>	07-MPR-192	2012	Mainstem Primary Restoration		Snohomish County	\$ 80,000
<b>Upper Raging River Protection and Restoration</b>	07-MPR-217	2012	Mainstem-primary restoration		Cascade Land Conservancy, WA Dept. of Natural Resources , Mountains to Sound Greenway Trust, King County DNRP	\$1,900,000
<b>Pilchuck River Assessment and Project Design</b>	07-MPR-300	2012	Mainstem-primary restoration		Snohomish County of	\$316,398
<b>Tolt River Riparian Restoration and Invasive Removal</b>	07-MPR-301	2012	Mainstem-primary restoration	3 acres riparian planted	Seattle City Light	\$72,185

<b>Skykomish Braided Reach Restoration Phase II</b>	07-MPR-307	2012	Mainstem-primary restoration	see above	Snohomish County of	\$350,000
<b>Middle Pilchuck Riparian Enhancement</b>	07-MPR-368	2012	Mainstem-primary restoration	x acres invasives controlled x acres riparian planted 200 feet armoring enhancement	Sound Salmon Solutions	\$100,000
<b>Jetty Island South Extension Phase II</b>	07-NR-003	2012	Nearshore Restoration	~ 1000 ft of Island extension	Port of Everett, US Army Corps of Engineers	\$450,000
<b>Nearshore Sediment Nourishment Feasibility Study Along Railroad</b>	07-NR-008	2012	Nearshore restoration		Snohomish County of, Snohomish County Marine Resources Committee (MRC)	\$1,000,000
<b>Japanese Gulch Fish Passage Improvements</b>	07-NR-010	2012	Nearshore restoration	Removed 3 fish barriers in Japanese Gulch Creek and reestablished a historical creek bed that was abandoned nearly 50 years ago.	City of Mukilteo	\$360,000
<b>Smith Island Estuary Restoration - Permitting and Design</b>	07-ER-102	2013	Estuary Restoration		Snohomish County	\$759,800
<b>Tolt River Riparian Restoration &amp; Invasive Removal</b>	07-MPR-301	2013	Mainstem Primary Restoration	3 acres invasive species treated; 3 acres riparian planting	Seattle City Light	\$72,185
<b>Tolt River Habitat Acquisitions (City of Carnation)</b>	07-MPR-312	2013	Mainstem Primary Restoration	Purchased 56 acres	Seattle City Light	\$531,593

<b>Weiss Creek Barrier Removal</b>	07-MPR-376	2013	Mainstem Primary Restoration	Culvert and riprap removal. Non-native vegetation control and native reveg. Outreach and education. Effectiveness monitoring (photo pts, topographic surveys & spawning surveys).	Wild Fish Conservancy	\$ 31,800.00
<b>Riparian Restoration at Stillwater Wildlife Area, 2010</b>	07-MPR-393	2013	Mainstem Primary Restoration	3 acres riparian planting	Sound Salmon Solutions	\$90,000
<b>People's Creek Riparian</b>	07-MPR-183	2013	Mainstem Primary Restoration	1 acre treated and planted	Stewardship Partners	
<b>Pilchuck River Riparian Restoration and Fish Habitat Enhancement</b>	07-MPR-304	2013	Mainstem-primary restoration	3 log jams installed 6.5 acres riparian planted 4,200 feet agriculture fencing	Sound Salmon Solutions	\$240,000
<b>Snoqualmie Riparian Restoration with Salmon-Safe Farms</b>	07-MPR-308	2013	Mainstem-primary restoration	16.7 acres riparian planted	Stewardship Partners	\$319,960
<b>Upper Waterwheel Restoration (Phase I - Design)</b>	07-RPR-031	2013	Rural Streams Primary Restoration	30% conceptual designs.	Wild Fish Conservancy	\$ 31,580.00

HWS ID	Project Name	MapID_2013
07-HSR-019	South Fork Skykomish Acquisitions	1
07-MPR-072	Raging River Upper Preston Reach Acquisitions	2
07-RSR-049	Patterson Creek Protection on Stevlingson Property	3
07-RSR-050	Patterson Creek State DNR Land Acquisition	4
07-MPR-305	Snoqualmie Fall City Reach Reconnection	5
07-ER-035	Diking District 6 Intertidal Restoration Project	6
07-MPR-328	Investigation of Low Dissolved Oxygen in the Snoqualmie Floodplain	7
07-MPR-326	CC Phase II Cherry Creek Floodplain Restoration	8
07-ER-013	Blue Heron Slough Habitat Conservation Bank	9
07-HRA-008	South Fork Snoqualmie Road Decommissioning	10
07-HSP-004	Miller River Restoration	11
07-ER-038	Bigelow Creek Rechannelization and Enhancement and the South Wetland Complex	12
07-MPR-108	Tolt River Focus Area 5 Protection	13
07-MPR-119	Raging River Kerriston Reach Restoration	14
07-MPR-216	Raging River Knotweed Control and Revegetation	15
07-NR-005	Renourish Existing Jetty Island Berm	16
07-RPR-018	Cherry Valley Dairy Stream Enhancement	17
07-HSR-029	Alpine Baldy Road Decommissioning - U.S. Forest Service Roads 6066 & 6067	18
07-NR-011	North Mukilteo Nearshore Restoration and Creosote Removal	19
07-MPR-321	McElhoe-Person Levee Setback	20
07-MPR-322	Snoqualmie Riparian Restoration	21
07-ER-037	Smith Island Estuary Restoration - Construction	22
07-RPR-022	West Fork and Lower Woods Creek Restoration Partnership	23
07-ER-036	Qwuloolt Estuary Restoration Project	24
07-NR-014	Priest Point Pocket Estuary Restoration	25
07-RSR-051	Harris Creek Barrier Removal and Off-Channel Habitat Restoration	26
07-MPR-030	Island Formation at Thomas' Eddy	26
07-ER-040	Steamboat Slough Tidal Marsh Enhancement	27
07-ER-053	Everett Riverfront North Wetland Complex and Adjacent Proposed Public Park	28
07-MPR-365	Fall City Park Riparian Restoraiton Phase 2	29
07-MPR-366	South Fork Skykomish Knotweed Control and Riparian Restoration	30
07-HRA-030	Upper Snoqualmie River Knotweed Control and Riparian Restoration	31
07-MPR-214	Upper Tychman Slough Restoration	32
07-NR-012	Tulalip Nearshore Acquisition and Restoration	33
07-RPR-030	Sorgenfrei Fish Passage Project	34
07-MPR-402	Pilchuck River Outreach & Restoration Campaign	35

HWS ID	Project Name	MapID_2013
07-MPR-137	Shinglebolt Slough	37
07-MPR-397	Tolt River Conservation	38
07-MPR-025	Lower Snoqualmie River Protection	39
07-MPR-196	Tolt Footbridge Restoration	40
07-MPR-005	Lower Tolt Restoration Project - Camp River Ranch	41
07-MPR-193	Snoqualmie River at Cherry Creek Riparian and Edge Enhancement	42
07-HSR-008	South Fork Skykomish Acquisitions	43
07-MPR-031	Lower Snohomish Mainstem (and Snoqualmie) Assessment	44
07-MPR-398	Pilchuck River upper Culvert Replacement	45
07-MPR-400	Raging River Side Channel Fish Passage Project (Phase II)	46
07-RPR-033	Upper Waterwheel Restoration (Phase II-Final Design & Construction)	47
07-RSR-061	Patterson Creek Culvert Replacements	48
07-USR-044	Allen Creek Streamkeeper	49
07-NR-026	Mission Beach Nearshore Restoration Feasibility and Design	50
07-NR-028	Snohomish County Nearshore Restoration- Construction	51
NO HWS Entry but like '07-NR-003	Jetty Island South Extension Phase III	52
07-MPR-403	Pilchuck Dam Removal	53
07-MPR-900	Upper Carlson Floodplain Reconnection	54
07-MPR-225	Tolt River Floodplain Reconnections	55
07-MPR-233	WRIA 07 CO2/02 Pilot Program	56
07-MPR-319	Indian/Langlois Cr. Restoration	57
07-MPR-231	Peoples Creek Channel Relocation and Riparian Restoration (Phase I)	58
07-RPR-035	Vanhulle Fish Passage Restoration (Phase I)	59
07-RSR-003	French Creek Healthy Soils Initiative	60
07-USR-019	Northpointe Park Riparian Restoration	61
07-RPR-034	Woods Creek In-Stream Restoration Partnership	62
07-NR-029	Day lighting Japanese Gulch Creek	63
07-USR-059	Olaf Strad Relocation and Restoration	64
07-MSR-038	Lower Wallace River Acquisition	65
07-MPR-194	McCormick Park Restoration - Phase II	66

# Snohomish Basin 3-Year Work Plan Project Map

## Legend

- Project Locations
- ▲ Cities
- Focus Reaches
- Primary Focus Reaches

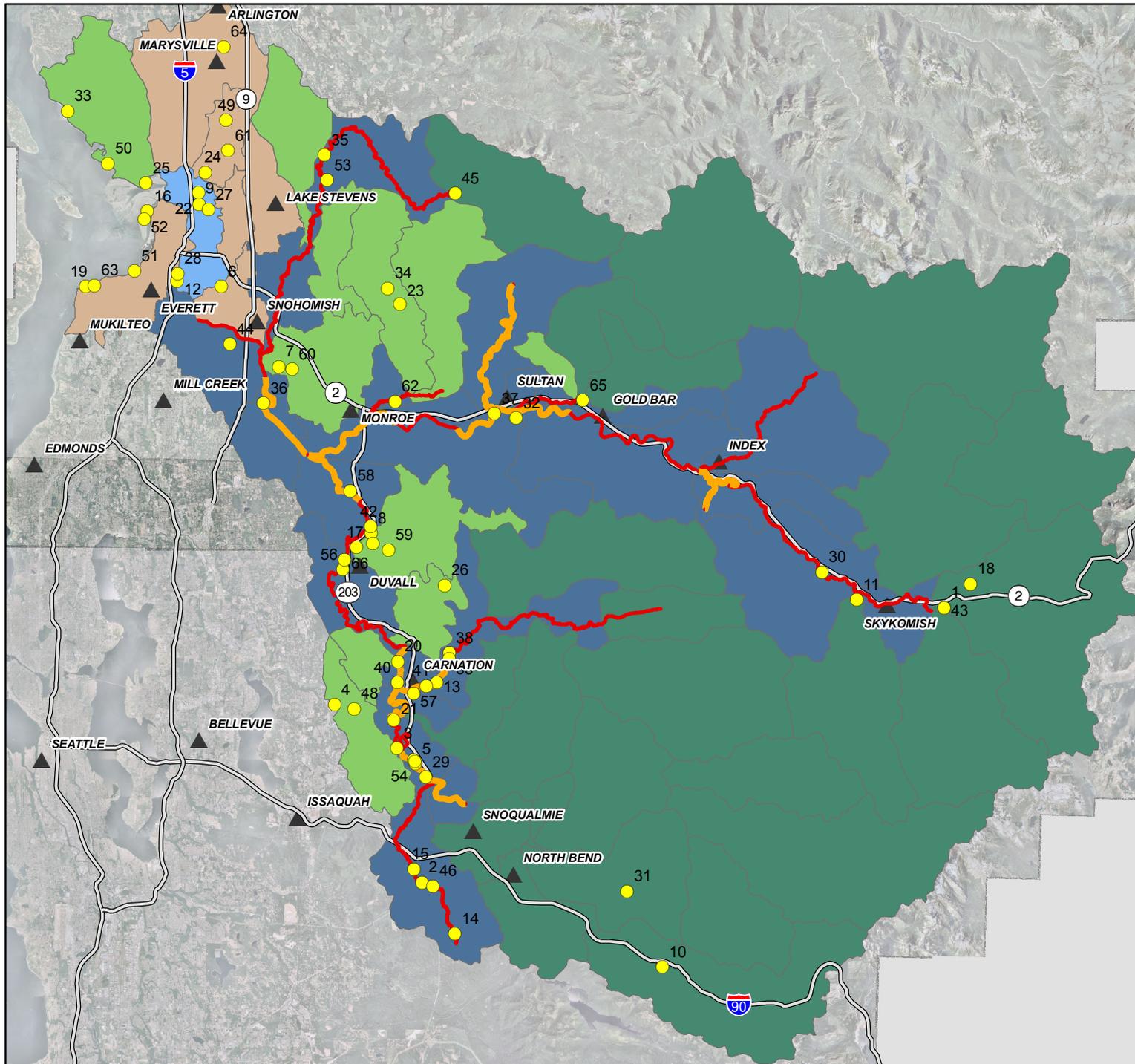
## Sub-basin Strategy Group

- Estuary
- Headwaters
- Mainstem
- Rural
- Urban



**Snohomish County**  
PUBLIC WORKS  
SURFACE WATER MANAGEMENT  
(425) 388-3464

All maps, data, and information set forth herein ("Data"), are for illustrative purposes only and are not to be considered an official citation to, or representation of, the Snohomish County Code. Amendments and updates to the Data, together with other applicable County Code provisions, may apply which are not depicted herein. Snohomish County makes no representation or warranty concerning the content, accuracy, currency, completeness or quality of the Data contained herein and expressly disclaims any warranty of merchantability or fitness for any particular purpose. All persons accessing or otherwise using this Data assume all responsibility for use thereof and agree to hold Snohomish County harmless from and against any damages, loss, claim or liability arising out of any error, defect or omission contained within said Data. Washington State Law, Ch. 42.56 RCW, prohibits state and local agencies from providing access to lists of individuals intended for use for commercial purposes and, thus, no commercial use may be made of any Data comprising lists of individuals contained herein.



Funding and New Project	Project Name	Project ID	Sub Basin Strategy Group	Project Performance	Plan Category	Habitat Type	Primary Species Benefiting	Sequence Rank	Current Project Status	Year 2014 Activity to be Funded	Year 2014 Estimated Budget	Year 2015 Activity to be Funded	Year 2015 Estimated Budget	Year 2016 Activity to be Funded	Year 2016 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	'Known Funding Sources
Fully funded	Renourish Existing Jetty Island Berm	07-NR-005	Nearshore Restoration	reoccurring (every 2-3 years) renourishment to maintain existing habitat functions on 2300 ft. of the berm to protect ~ 15 acre saltmarsh habitat.	Restoration Projects	Estuary (River Delta), Nearshore (Embayment's ), Nearshore (Beaches)	Chinook	Most Pressing Need	Design Completed	Renourishment of berm	\$ 100,000			Renourishment	\$ 100,000	12/31/2020	Port of Everett	\$ 475,000	Port of Everett, US Army Corps of Engineers
Fully Funded	Nearshore Beach Nourishment Design and Permitting	07-NR-025	Nearshore Restoration	Produce 100% Design Drawings for Sites 2, 5, and 9 ; Develop and obtain required permits for implementation.	Restoration Projects	Nearshore (Beaches)	Chinook	Most Pressing Need	Proposed	Permitting and Design	\$ 139,000					8/31/2014	Snohomish County, Snohomish County Marine Resources Advisory Committee	\$ 139,000	SRFB - Salmon Recovery Funding Board, NW Straits Marine Cons Found
NEW	Day lighting Japanese Gulch Creek	07-NR-029	Nearshore Restoration	Daylight approximately 300 linear feet of Japanese Gulch Creek that has been culverted and paved over as part of the old Mukilteo Tank Farm site.	Restoration Projects	Nearshore	Chinook, Bull Trout, Chum, Coho, Cutthroat	Pressing Need	Feasibility Planning Efforts;	Feasibility, Preliminary Design	\$ 25,000					12/31/2017	City of Mukilteo	\$2,200,000	Grants
NEW	Mission Beach Nearshore Restoration Feasibility and Design	07-NR-026	Nearshore Restoration	1100 feet of armoring and bulkheads removed;	Restoration Projects	Nearshore (Beaches)	Chinook	Most Pressing Need	Proposed	Design , Feasibility	\$ 172,000	Final Design , Permitting		Construction		12/31/2015	Tulalip Tribes	\$ 2,000,000	
NEW	Snohomish County Nearshore Restoration-Construction	07-NR-028	Nearshore Restoration	.73 Miles (1.1 acres) beach nourishment; remove .6 miles shoreline armoring	Restoration Projects	Nearshore (Beaches)	Chinook	Most Pressing Need	Feasibility Completed	Final permitting and design		Construction	\$ 800,000			4/1/2015	Snohomish County Marine Resources Advisory Committee	\$ 1,111,077	City of Everett (\$40,000) Port of Everett (\$187,800) Estuary Salmon Restoration Program (ESRP) (\$600,000) US Fish & Wildlife Service (\$50,000)
NEW - Funded	Jetty Island South Extension Phase III	NO HWS Entry but like '07-NR-003	Nearshore Restoration	~1000 feet of Island extension	Restoration Projects	Nearshore (Beaches)	Chinook	Most Pressing Need	Design Completed	Permitting; Placement of sediment	\$ 450,000					12/31/2015	Port of Everett, US Army Corps of Engineers	\$ 450,000	US Army Corps of Engineers, Port of Everett
	North Mukilteo Nearshore Restoration and Creosote Removal	07-NR-011	Nearshore Restoration	Removal of the existing ferry terminal site includes removal of 248 pilings & 406 tons treated timber. Removal of the Tank Farm Fuel Dock includes removal of 3950 pilings and 7300 tons treated timber. The entire project (existing terminal site & TF Fuel Dock) will include removal of approximately 145,000 sq feet overwater structures.	Restoration Projects	Nearshore (Beaches)	Chinook, Bull Trout, Chum, Coho, Cutthroat	Most Pressing Need	Draft EIS completed; FEIS is pending release in June 2013; Tank Farm Transfer EA completed. Tank Farm transfer to be completed in 2013.							12/31/2017	Washington State Ferries	\$ 21,700,000	WA State Legislature, grant funds; 'Mitigation funds
	Tulalip Nearshore Acquisition and Restoration	07-NR-012	Nearshore Restoration	Acquire parcels along the Tulalip Tribes nearshore; remove armoring.	Acquisition/Restoration (Combination)	Nearshore (Beaches), Nearshore (Embayment's ), Nearshore (Rocky Coast)	Chinook	Pressing Need	Conceptual							1/1/2014	Tulalip Tribes	\$ -	
	Priest Point Pocket Estuary Restoration	07-NR-014	Nearshore Restoration	Acquire 3.1 acre parcel within the historic pocket estuary for future restoration.	Acquisition/Restoration (Combination)	Nearshore (Beaches), Nearshore (Embayment's ),	Chinook	Pressing Need	Conceptual	Acquisition						12/31/2015	Tulalip Tribes	\$ -	

Funding and New Project	Project Name	Project ID	Sub Basin Strategy Group	Project Performance	Plan Category	Habitat Type	Primary Species Benefiting	Sequence Rank	Current Project Status	Year 2014 Activity to be Funded	Year 2014 Estimated Budget	Year 2015 Activity to be Funded	Year 2015 Estimated Budget	Year 2016 Activity to be Funded	Year 2016 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	'Known Funding Sources
<b>Estuary Restoration</b>																			
Fully Funded	Blue Heron Slough Habitat Conservation Bank	07-ER-013	Estuary Restoration	320 acres off channel habitat reconnected; 13,500 ft. edge habitat restored	Restoration Projects	Estuary (River Delta)	Chinook	Most Pressing Need	Design Completed, Permitting Completed	setback dike construction; Dike Breaching						2/28/2015	Port of Everett, Wildlands, Inc.	\$ 2,700,000	'Port of Everett and Wildlands Inc.
Fully Funded	Qwuloolt Estuary Restoration Project	07-ER-036	Estuary Restoration	400 acres tidal influenced wetlands restored; improved 16 miles of salmon access	Restoration Projects	Estuary (River Delta)	Chinook	Most Pressing Need	Feasibility Completed, Design Completed, Construction Commenced;	remaining 25% constructed; Dike breach and completion of setback levee	\$ 2,750,000					12/31/2017	Tulalip Tribes	\$ 11,100,000	Estuary Salmon Restoration Program (ESRP); SRFB; PSAR; NOAA AARA; USFWS; National Coastal Wetlands; USACE 544 funds;
	Diking District 6 Inter-tidal Restoration Project	07-ER-035	Estuary Restoration	230 acres restored to tidal influence; non-tidal wetland enhancements	Acquisition/Restoration (Combination)	Estuary (River Delta)	Chinook	Most Pressing Need	Feasibility Completed	Final Design; permitting	\$ 900,050	Construction	\$ 5,000,000	Construction	\$ 5,000,000	12/31/2015	City of Everett	\$ 10,000,000	
	Smith Island Estuary Restoration - Construction	07-ER-037	Estuary Restoration	400 acres tidal influenced wetlands restored;	Restoration Projects	Estuary (River Delta)	Chinook	Most Pressing Need	Feasibility Completed; in permitting	setback dike construction;	\$ 8,000,000	dike breaching	\$ 5,000,000			12/31/2016	Snohomish County	\$ 15,000,000	SRFB - Salmon Recovery Funding Board (\$2,250,000), Mitigation funds (\$2,400,000), Estuary Salmon Restoration Program (ESRP) \$2,600,000
	Bigelow Creek Re-channelization and Enhancement and the South Wetland Complex	07-ER-038	Estuary Restoration	Enhance 10.4 acres of floodplain/tidal marsh (berm or dike removal); 1,000 feet of tidal channel with associated wetlands	Restoration Projects	Estuary (River Delta)	Chinook	Pressing Need	Design Completed, Feasibility Pending, Land Acquisition Completed	Final Permitting	\$ 10,000	Construction	\$ 2,000,000	Monitoring		12/31/2015	City of Everett	\$ 3,000,000	DOE (\$275,000)
	Steamboat Slough Tidal Marsh Enhancement	07-ER-040	Estuary Restoration	100 acres berm or dike removal/modification	Restoration Projects	Estuary (River Delta)	Chinook	Most Pressing Need	Feasibility Pending	Design and permitting	\$ 100,000	Construction	\$ 335,000			12/31/2015	Snohomish County	\$ 435,000	
	Everett Riverfront North Wetland Complex and adjacent proposed Public Park	07-ER-053	Estuary Restoration	Re-establish, approximately 21.6 acre tidally influenced forested, scrub-shrub and emergent marsh over 50 years	Restoration Projects	Estuary (River Delta)	Chinook	Most Pressing Need	Feasibility Completed, Design Completed, Land Acquisition Completed							12/31/2015	City of Everett	\$ 2,004,048	Dept. of Commerce grant (\$800,000);
<b>Mainstem Restoration</b>																			
Fully Funded	Lower Tolt Restoration Project - Camp River Ranch	07-MPR-005	Mainstem Primary Restoration	9 acres weed control; 3 acres planting	Restoration Projects		Chinook	Pressing Need	Implementation	Ongoing weed control: Planting	\$ 15,000	Project Complete				4/30/2014	Sound Salmon Solutions	\$ 50,000	King Conservation District, RCO
Fully Funded	Upper Tychman Slough Restoration	07-MPR-214	Mainstem Primary Restoration	6 acres weed control; 6 acres riparian planting; 6 flood fences; 15 instream LWD; 1000 ft. livestock exclusion fence	Restoration Projects	Rivers/Streams/Shoreline, Riparian	Chinook	Pressing Need	Design Completed; Implementation; Permitting	Monitoring & Maintenance	\$ 20,000	Project Complete				12/31/2014	Sound Salmon Solutions	\$ 380,000	NRDA Funds, SRFB
Fully Funded	Raging River Knotweed Control and Revegetation	07-MPR-216	Mainstem Primary Restoration	30 acres treated and riparian planting	Restoration Projects	Riparian	Chinook	Most Pressing Need	Feasibility Pending	weed control						12/31/2014	Mountains to Sound Greenway Trust	\$ 100,000	

Funding and New Project	Project Name	Project ID	Sub Basin Strategy Group	Project Performance	Plan Category	Habitat Type	Primary Species Benefiting	Sequence Rank	Current Project Status	Year 2014 Activity to be Funded	Year 2014 Estimated Budget	Year 2015 Activity to be Funded	Year 2015 Estimated Budget	Year 2016 Activity to be Funded	Year 2016 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	'Known Funding Sources
Fully Funded	Investigation of Low Dissolved Oxygen in the Cherry Creek Floodplain	07-MPR-328	Mainstem Primary Restoration	Data collected on water quality, hydraulic properties - ID degraded WQ drivers to be addressed. Evaluate. Impacts of ditch cleaning on WQ.	Non-Capital Projects	Instream	Chinook	Pressing Need	Feasibility Completed; 'Baseline data collection completed	Treatment data collection	\$ 20,000					12/31/2014	Wild Fish Conservancy	\$ -	King Conservation District
Fully Funded	Fall City Park Riparian Restoration Phase 2	07-MPR-365	Mainstem Primary Restoration	9 acres of riparian restoration	Restoration Projects	Riparian	Chinook	Pressing Need	Construction	construction	\$ 250,000	monitoring	\$ 30,000			12/31/2014	Snoqualmie Tribe	\$ 280,000	Tribal EPA funding (\$200,000) and King Conservation District (\$30,000)
Fully Funded	Tolt River Conservation	07-MPR-397	Mainstem Primary Restoration	25 acres acquired	Acquisition Projects	Rivers/Stream s/Shoreline	Chinook	Most Pressing Need	Conceptual	Acquisition	\$ 250,000					12/30/2016	King County DNR & Parks	\$ 250,000	King County Conservation Futures (\$100,000); SRFB (\$150,000)
Fully Funded	Tolt River Floodplain Restoration	07-MPR-224	Mainstem Primary Restoration	3.5 acres riparian	Restoration Projects	Riparian	Chinook	Pressing Need	Construction	Construction	\$ 35,000					12/31/2014	Mountains to Sound Greenway Trust	\$ 45,000	Cooperative Management Grant, NWIF
NEW	Snoqualmie Private landowner restoration 2012 -2016	07-MPR-329	Mainstem Primary Restoration	10 acres riparian planting	Restoration Projects	Riparian	Chinook	Pressing Need	Construction	Riparian Planting	\$ 75,000	Riparian Planting	\$ 75,000	Riparian Planting	\$ 75,000	12/31/2016	Stewardship Partners	\$ 400,000	Washington Department of Ecology (DOE) (\$150,000) Washington Department of Agriculture (\$20,482) King County (\$18,500) American Farmland Trust - Pioneers in Conservation
NEW	McCormick Park Restoration - Phase II	07-MPR-194	Mainstem Primary Restoration	Weed Control and Planting on 5 acres	Restoration Projects	Riparian	Chinook	Pressing Need	Implementation	Weed control and Planting	\$ 15,000	Monitoring & Maintenance	\$ 15,000				Sound Salmon Solutions	\$ 45,000	
NEW	Pilchuck Dam Removal	07-MPR-403	Mainstem Primary Restoration	re-establishment of fish passage to 37 miles of fish habitat for Chinook, Coho, Chum, Pink, Steelhead, Bulltrout and Cutthroat.	Restoration Projects	Instream, Riparian, Rivers/Stream s/Shoreline	Chinook	Most Pressing Need	Feasibility Completed	Final Design and Permitting	\$ 120,000	Implementation				12/31/2015	City of Snohomish	\$ 3,500,000	
NEW	Upper Carlson Floodplain Reconnection	07-MPR-900	Mainstem Primary Restoration	remove 1,600 feet long Upper Carlson Facility (levee & revetment); reconnection and restoration of 50 acres of floodplain habitat; 4-6 large logjams installed; enhancement of 2,000 linear feet of mainstem edge habitat and 1.75 acres of existing off-channel habitat	Restoration Projects	Rivers/Stream s/Shoreline	Steelhead, Chinook	Most Pressing Need	Design Completed	Construction	\$ 2,800,000	Monitoring	\$ 77,499			12/31/2015	King County DNR & Parks	\$ 2,877,499	King Co Water & Land Res (\$431,625)
NEW	Tolt River Floodplain Reconnections	07-MPR-225	Mainstem Primary Restoration	Restore 2500 feet of shoreline along the Tolt River.	Restoration Projects	Rivers/Stream s/Shoreline	Chinook	Most Pressing Need	Feasibility Pending	Design	\$ 200,000	Construction	\$ 750,000	Monitoring	\$ 50,000	12/31/2017	King County DNR & Parks	\$ 1,000,000	
NEW	WRIA 07 CO2/02 Pilot Program	07-MPR-233	Mainstem Primary Restoration	Invasive removal and riparian re-vegetation. along at minimum 6.0 acres of river channel	Restoration Proj	Riparian	Chinook	Pressing Need	Proposed	Contracts, field work, Plant purchase	\$ 37,500	Field work, materials	\$ 40,000	Field work, materials	\$ 40,000	6/30/2017	Wild Fish Conservancy	\$ 117,500	
NEW	Indian/Langlois Cr. Restoration	07-MPR-319	Mainstem Primary Restoration	Naturalize ditched channel	Restoration Projects	Instream	Coho, Chinook	Most Pressing Need	Design pending	Design, permitting, construction	\$ 120,000	planting, maintenance	\$ 30,000	None	\$ -	12/31/2015	Wild Fish Conservancy	\$ 150,000	

Funding and New Project	Project Name	Project ID	Sub Basin Strategy Group	Project Performance	Plan Category	Habitat Type	Primary Species Benefiting	Sequence Rank	Current Project Status	Year 2014 Activity to be Funded	Year 2014 Estimated Budget	Year 2015 Activity to be Funded	Year 2015 Estimated Budget	Year 2016 Activity to be Funded	Year 2016 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	'Known Funding Sources
NEW	Peoples Creek Channel Relocation and Riparian Restoration (Phase I)	07-MPR-231	Mainstem Primary Restoration	Naturalize ditched channel	Restoration Projects	Instream	Coho	Most Pressing Need	Conceptual - Feasibility Study	Stream / Hydro / Soil Analysis; Topographic Work; GIS	\$ 100,000	Report; 30% conceptual design	\$ 25,000	None	\$ -	12/31/2016	Wild Fish Conservancy	\$ 125,000	
	Investigation of Low Dissolved Oxygen in the Snoqualmie Floodplain	07-MPR-328		Data collected on water quality, hydraulic properties	Non-Capital Projects	Instream	Chinook		Feasibility Completed	None	\$0	None	\$0	None	\$0	12/31/2014	Wild Fish Conservancy	\$ 63,710	King Conservation District, WA Dept. of Ecology
	Lower Snoqualmie River Protection	07-MPR-025	Mainstem Primary Restoration	10 acres acquired	Acquisition Projects	Riparian	Chinook	Most Pressing Need	Conceptual	Acquisition	\$ 250,000	Acquisition	\$ 250,000		12/29/2017	King County DNR & Parks	\$ 500,000		
	Island Formation at Thomas' Eddy	07-MPR-030	Mainstem Primary Restoration	2000 ft. linear side channel; remove 50 ft. of armoring; restore 5 acres of riparian habitat; restore 1/5 acres of summer off-channel habitat; install 100 large wood complexes (2000 ft.)	Restoration Projects	Instream	Chinook	Most Pressing Need	Feasibility Completed					design and permitting	\$ 380,000	12/16/2016	Snohomish County	\$ 380,000	
	Lower Snohomish Mainstem (and Snoqualmie) Assessment	07-MPR-031	Mainstem Primary Restoration	completed assessment identifying potential restoration sites	Restoration Projects	Instream	Chinook	Pressing Need	Feasibility Pending	Data Collection	\$50,000	Complete Assessment	\$30,000		6/30/2015	Snohomish County	\$ 80,000	Snohomish County SWM (\$80,000)	
	Conservation Reserve Enhancement Program - Mainstem-primary	07-MPR-057	Mainstem Primary Restoration	2,000 feet riparian livestock exclusion fencing; 5 acres riparian planting	Restoration Projects	Riparian	Chinook	Pressing Need	Ongoing	Planting and maintenance	\$ 11,000	Planting and maintenance	\$ 11,000	Planting and maintenance	\$ 11,000	12/15/2016	Snohomish Conservation District	\$ 20,000	Farm Services Agency
	Raging River Upper Preston Reach Acquisitions	07-MPR-072	Mainstem Primary Restoration	24 acres acquired	Acquisition Projects	Rivers/Streams/Shoreline	Chinook	Most Pressing Need	Conceptual	Acquisition	\$ 250,000	Acquisition	\$ 250,000		12/31/2015	King County DNR & Parks	\$ 500,000		
	Tolt River Focus Area 5 Protection	07-MPR-108	Mainstem Primary Restoration	30 acres acquired	Restoration Projects	Rivers/Streams/Shoreline	Chinook	Most Pressing Need	Feasibility Pending	Acquisition	\$ 250,000	Acquisition	\$ 250,000		12/31/2015	King County DNR & Parks	\$ 500,000		
	Raging River Kerriston Reach Restoration	07-MPR-119	Mainstem Primary Restoration	15 acres riparian planting	Restoration Projects	Riparian	Steelhead	Pressing Need	Feasibility Pending						12/31/2014	King County DNR & Parks	\$ 200,000	King County DNR & Parks (\$100,000)	
	Shinglebolt Slough	07-MPR-137	Mainstem Primary Restoration	4000 ft. off channel habitat; 5 acres invasive plan control and plantings	Restoration Projects	Instream, Riparian	Chinook	Most Pressing Need	Proposed	Design, Permitting, Construction	\$ 396,000				12/31/2014	Snohomish County	\$ 396,000	Public Utility District	

Funding and New Project	Project Name	Project ID	Sub Basin Strategy Group	Project Performance	Plan Category	Habitat Type	Primary Species Benefiting	Sequence Rank	Current Project Status	Year 2014 Activity to be Funded	Year 2014 Estimated Budget	Year 2015 Activity to be Funded	Year 2015 Estimated Budget	Year 2016 Activity to be Funded	Year 2016 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	'Known Funding Sources
	<b>Snoqualmie River at Cherry Creek Riparian and Edge Enhancement</b>	07-MPR-193	Mainstem Primary Restoration	6 acres weed control; 6 acres planting	Restoration Projects	Rivers/Streams/Shoreline, Riparian	Chinook	Pressing Need	Feasibility Pending; Implementation	Maintenance (3 ac); Weed control (3 ac) Planting (3 ac)	\$ 52,000	Maintain (6 ac); Plant as needed	\$ 36,000	Project Complete		12/31/2015	Sound Salmon Solutions	\$ 149,000	
	<b>Tolt Footbridge Restoration</b>	07-MPR-196	Mainstem Primary Restoration	1000 ft. edge, 5 ac. Off-channel, 2 ac. Riparian	Restoration Projects	Rivers/Streams/Shoreline	Chinook	Most Pressing Need	Feasibility Pending	Design	\$ 150,000	Construction	\$ 500,000			12/31/2015	King County	\$ 650,000	
	<b>South Fork Skykomish Roads</b>	07-MPR-215	Mainstem Primary Restoration	38 miles road treatments	Restoration Projects	Upland	Bull Trout, Chinook, Coho, Steelhead	Most Pressing Need	Construction	10 miles rd. decommission and storage treatments	\$ 350,000	10 miles rd. decommission and storage treatments	\$ 360,000	10 miles rd. decommission and storage treatments	\$ 375,000	12/31/2018	US Forest Service	\$ 700,000	US Forest Service (\$205,000)
	<b>Lower Skykomish Restoration Phase I: Groeneveld, Bahn Miller, Labish Projects. Phase II: Remlinger Project</b>	07-MPR-370	Mainstem Primary Restoration	3.3 miles of Mainstem and off channel flood plain enhancement. 22 instream vertical wood arrays, 1.5 linear miles Riparian edge plantings, 12 acres riparian planting, 3 (large) woody material placement areas, 7 (small) woody material placement structures	Restoration Projects	Riparian, Instream	Chinook	Most Pressing Need	Feasibility Completed	Construction	\$600,000	Construction	\$700,000	Monitoring	25,000 (for whole river)	12/31/2016	Snohomish County	\$1,300,000	SRFB - Salmon Recovery Funding Board, (\$461,500); PUD - (\$175,000); NOAA Restoration - (\$30,000); Snohomish County (\$105,000), Private Landowner(s)
	<b>Middle Pilchuck River Final Design</b>	07-MPR-186	Mainstem Primary Restoration	Complete final design and permitting for 1 project	Restoration Projects	Riparian, Rivers/Streams/Shoreline	Chinook	Most Pressing Need	Feasibility Completed; conceptual design; final design and permitting	Final Design	\$ 120,000					12/31/2014	Snohomish County	\$ 120,000	SRFB - Salmon Recovery Funding Board (\$75,000)
	<b>Snoqualmie Fall City Reach Reconnection</b>	07-MPR-305	Mainstem Primary Restoration	5280 feet of edge habitat restored; 5 acres of off-channel habitat restored, 12 acres of riparian restoration	Acquisition/Restoration (Combination)	Rivers/Streams/Shoreline	Chinook	Most Pressing Need	Feasibility Completed	Design	\$ 500,000	Design	\$ 250,000	Construction	\$ 3,250,000	12/1/2016	King County DNR & Parks	\$ 4,000,000	
	<b>Riley Slough Culvert Replacement Project</b>	07-MPR-318	Mainstem Primary Restoration	remove and replace 1 fish passage barrier; 1 acre riparian planting	Restoration Projects	Riparian	Coho	Pressing Need	Proposed	Permitting and Design	\$ 15,000	Construction	\$ 35,000		\$ -	12/31/2015	Snohomish Conservation District	\$ 50,000	No funding secured
	<b>McElhoe-Pearson Restoration Project</b>	07-MPR-321	Mainstem Primary Restoration	Channel Connectivity/Rehabilitation/Creation - Floodplain Restoration 2,500 Linear Feet	Restoration Projects	Rivers/Streams/Shoreline	Chinook	Most Pressing Need	Feasibility Completed			Design	\$ 200,000	Construction	\$ 618,000	9/30/2016	King County DNR & Parks	\$ 918,000	
	<b>Snoqualmie Riparian Restoration</b>	07-MPR-322	Mainstem Primary Restoration	10 acres riparian restoration	Restoration Projects	Riparian	Chinook	Most Pressing Need	Design Completed	Construction	\$ 100,000					12/31/2014	King County DNR & Parks	\$ 100,000	
	<b>CC Phase II. Cherry Creek Floodplain Restoration</b>	07-MPR-326	Mainstem Primary Restoration	Riparian re-vegetation. Along ~4500 feet of newly constructed channel	Restoration Projects	Instream, Riparian	Chinook	Pressing Need	Feasibility Completed; 'Phase I planting completed - Phase II proposed project.	Phase II planting	\$ 100,000	Maintenance	\$ 50,000	Maintenance	\$ 50,000	12/31/2016	Wild Fish Conservancy, Sound Salmon Solutions	\$ 200,000	
	<b>South Fork Skykomish Knotweed Control and Riparian Restoration</b>	07-MPR-366	Mainstem Primary Restoration	3.5 river miles of initial treatment; up to 14 river miles of maintenance retreatment; riparian plantings along 3,000 linear feet per year.	Restoration Projects	Riparian	Chinook	Pressing Need	Feasibility Pending	Construction	\$ 278,500					12/31/2014	King County DNR & Parks	\$ 278,500	King County DNR & Parks (\$25,000)

Funding and New Project	Project Name	Project ID	Sub Basin Strategy Group	Project Performance	Plan Category	Habitat Type	Primary Species Benefiting	Sequence Rank	Current Project Status	Year 2014 Activity to be Funded	Year 2014 Estimated Budget	Year 2015 Activity to be Funded	Year 2015 Estimated Budget	Year 2016 Activity to be Funded	Year 2016 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	'Known Funding Sources
	<b>Pilchuck Culvert Replacement</b>	07-MPR-398	Mainstem Primary Restoration	Culvert retrofit or removal. Non-native vegetation control and native re-vegetation. Outreach and education. Effectiveness monitoring.	Restoration Projects	Instream	Coho		Conceptual	Design , Construction	\$ 100,000	Design , Construction	\$ 200,000	Design , Construction	\$ 250,000	12/31/2014	Wild Fish Conservancy	\$ 550,000	
	<b>Raging River Side Channel Fish Passage Project (Phase II)</b>	07-MPR-400	Mainstem Primary Restoration	Replace one 1.5 ft. partial barrier culvert with a 4.0 ft. box culvert.	Restoration Proj	Instream	Coho	Most Pressing Need	Proposed Construction	Construction	\$ 60,000	Maintenance	\$ 10,000	Maintenance & Fin	\$ 13,000	6/30/2016	Wild Fish Conservancy	\$ 83,000	
	<b>Pilchuck River Outreach &amp; Restoration Campaign</b>	07-MPR-402	Mainstem Primary Restoration	15 acres riparian planting; 1 acre off channel habitat restored	Restoration Projects	Instream, Riparian, Rivers/Streams/Shoreline	Bull Trout, Chinook, Coho, Cutthroat, Pink, Steelhead	Most Pressing Need	Proposed/Constructi	Planting and maintenance	\$ 66,666	Planting and maintenance	\$ 66,666	Planting and maintenance	\$ 66,666	12/31/2016	Snohomish Conservation District	\$ 200,000	Earthcorps/NOAA CRP (\$X)
Fully Funded	<b>Conservation Reserve Enhancement Program - Mainstem-secondary</b>	07-MSR-018	Mainstem Secondary Restoration	2000 ft. livestock exclusion fencing; 5 acres riparian planting;	Restoration Projects	Riparian	Chinook	Pressing Need	Ongoing	Planting and maintenance	\$ 5,000	Planting and maintenance	\$ 5,000	Planting and maintenance	\$ 5,000	12/15/2016	Snohomish Conservation District	\$ 20,000	Farm Services Agency
NEW	<b>Wallace River Acquisition</b>	07-MSR-404	Mainstem Secondary Restoration	135 acres protected/acquired, 5346 ft. shoreline protected/acquired	Acquisition Projects	Rivers/Streams/Shoreline	Chinook	Pressing Need	Proposed	Acquisition	\$ 250,000	Acquisition completed	\$ 1,600,000			12/31/2015	Forterra	\$ 1,600,000	
<b>Lowland Tributaries Restoration</b>																			
	<b>Woods Creek Riparian Restoration Partnership</b>	07-RPR-022	Rural Streams Primary Restoration	30 acres riparian planting	Restoration Projects	Instream, Riparian	Chinook, Steelhead, Coho	Pressing Need	Feasibility Pending	Planting	\$ 100,000	Planting and maintenance	\$ 100,000	Planting and maintenance	\$ 100,000	12/31/2017	Snohomish Conservation District	\$ 300,000	Department of Ecology (pending - on funding list), NOAA (pending - Earthcorps application in)
NEW	<b>Woods Creek In-Stream Restoration Partnership</b>	07-RPR-034	Rural Streams Primary Restoration	30 large wood placement	Restoration Projects	Instream	Chinook, Coho, Steelhead	Need	Proposed	Planning	\$ 25,000	Construction	\$ 137,500	Construction	\$ 137,500	12/31/2017	Adopt A Stream Foundation	\$ 300,000	
NEW	<b>Vanhulle Fish Passage Restoration (Phase I)</b>	07-RPR-035	Rural Streams Primary Restoration	Complete conceptual designs for two culvert replacements.	Restoration Proj	Rivers/Streams/Shoreline, Riparian		Pressing Need	Conceptual	Conceptual Design	\$ 80,240					12/31/2015	Wild Fish Conservancy	\$ 80,240	
	<b>Conservation Reserve Enhancement Program - Rural Streams-primary</b>	07-RPR-017	Rural Streams Primary Restoration	2000 ft. livestock exclusion fencing; 9 acres riparian planting	Restoration Projects	Riparian	Chinook		Design completed; Ongoing	Planting and maintenance	\$ 5,000	Planting and maintenance	\$ 5,000	Planting and maintenance	\$ 5,000	12/15/2016	Snohomish Conservation District	\$ 30,000	Farm Services Agency
	<b>Cherry Valley Dairy Stream Enhancement</b>	07-RPR-018	Rural Streams Primary Restoration	.5 mile stream re-channelization and barrier removal, 1.5 acres riparian plantings, .5 Miles exclusion fencing;	Restoration Projects	Riparian	Coho		Design Completed, Feasibility Pending; construction begun	Maintenance		Maintenance				12/31/2015	Snoqualmie Tribe	\$ 200,000	EPA Tribal project funding (\$165,400); KC Farm BMP cost shares; Land owner shares
	<b>Sorgenfrei Fish Passage Project</b>	07-RPR-030	Rural Streams Primary Restoration	1 partial fish passage blockage removed; upstream accessible to fish.	Restoration Projects	Rivers/Streams/Shoreline, Instream	Coho	Pressing Need	Conceptual/Proposed	Design and construction	\$ 55,000					12/31/2014	Adopt A Stream Foundation	\$ 55,000	

Funding and New Project	Project Name	Project ID	Sub Basin Strategy Group	Project Performance	Plan Category	Habitat Type	Primary Species Benefiting	Sequence Rank	Current Project Status	Year 2014 Activity to be Funded	Year 2014 Estimated Budget	Year 2015 Activity to be Funded	Year 2015 Estimated Budget	Year 2016 Activity to be Funded	Year 2016 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	'Known Funding Sources
	Upper Waterwheel Restoration (Phase II - Final Design and Construction)	07-RPR-033	Rural Streams Primary Restoration	Final Design and Construction	Restoration Projects	Instream, Riparian	Coho	Pressing Need	Feasibility Pending; Conceptual	Final design, permitting, construction	\$ 100,000	planting, maintenance	\$ 50,000	planting, maintenance	\$ 50,000	12/31/2016	Wild Fish Conservancy	\$ 250,000	
NEW	French Creek Healthy Soils Initiative	07-RSR-003	Rural Streams Secondary Restoration	20 hedgerows planted; 20 acres riparian buffers;	Restoration Projects	Riparian, Upland, Wetland	Coho	Need	Proposed	Implementation	\$ 66,666	Implementation	\$ 66,666	Implementation	\$ 66,666	2/1/2018	Snohomish Conservation District	\$ 200,000	Applied for NRCS CIG grant. Nothing secured.
	Patterson Creek Protection on Stevingson Property	07-RSR-049	Rural Streams Secondary Restoration	10 acres acquired	Acquisition Projects	Instream	Steelhead	Need	Feasibility Pending	Acquisition	\$ 425,000					12/31/2015	King County DNR & Parks	\$ 425,000	
	Patterson Creek State DNR Land Acquisition	07-RSR-050	Rural Streams Secondary Restoration	160 acres acquired	Acquisition Projects	Instream	Steelhead	Most Pressing Need	Conceptual	Acquisition	\$ 2,500,000					12/31/2014	King County DNR & Parks	\$ 2,500,000	King County Conservation Futures (\$1,000,000)
	Harris Creek Barrier Removal and Off-Channel Habitat Restoration	07-RSR-051	Rural Streams Secondary Restoration	Removal of a fish passage barrier (road prism) to reconnect approximately 0.6 miles and 7 acres of off channel habitat	Restoration Projects	Instream, Rivers/Stream s/Shoreline, Wetland	Coho	Most Pressing Need	Feasibility Completed	Design, Construct	\$ 35,000	Final Construction	\$ 10,620			12/31/2015	Tulalip Tribes	\$ 45,620	Tulalip Tribes
	Patterson Creek Culvert Replacement(s)	07-RSR-061	Rural Streams Secondary Restoration	Culvert retrofit or removal. Non-native vegetation control and native re-vegetation. Outreach and education. Effectiveness monitoring.	Restoration Projects	Instream	Coho	Need	Conceptual	Design , Construction	\$ 155,750	Design , Construction	\$ 125,350	Design , Construction	\$ 278,900	12/31/2016	Wild Fish Conservancy	\$ 560,000	
NEW	Northpointe Park Riparian Restoration	07-USR-019	Urban Streams Restoration	3 acres invasive control and riparian planting	Restoration Projects	Riparian	Coho	Need	Proposed	Implementation	\$ 15,000	Implementation	\$ 15,000		\$ -	5/1/2015	Snohomish Conservation District	\$ 30,000	Applied to NFWF 5 Star grant. Nothing secured.
	Allen Creek Streamkeeper	07-USR-044	Urban Streams Restoration	Approximately 3 acres riparian enhancement	Restoration Projects	Riparian and Instream	Coho	Need	in progress	landowner outreach and construction	\$ 60,000	Construction	\$ 20,000			6/1/2015	Adopt A Stream Foundation	\$ 243,000	Ecology 319 grant, Tulalip Charitable Fund, CREP, NFWF
	Jones Creek Relocation and Wetland Enhancement	07-USR-034	Urban Streams Restoration	700 ft. channel relocation; .13 miles instream habitat treated; 5 acres riparian planting; LWD installed; Water Quality/Quantity improvements, instream habitat, flood control	Restoration Projects	Instream, Riparian, Wetland	Coho	Need	Proposed, Feasibility Pending, Conceptual	Preliminary Design	\$ 30,000	Construction	\$ 300,000	Monitoring and Maintenance	\$ 15,000	12/31/2017	Adopt A Stream Foundation	\$ 400,000	none known
	Olaf Strad Relocation and Restoration	07-USR-059	Urban Streams Restoration	1000 ft. channel reconfigured/relocated, Water Quality/Quantity improvements, instream habitat, flood control	Restoration Projects	Instream, Riparian, Wetland, Upland, Rivers/Stream s/Shoreline	Coho	Need	Conceptual							not specified	Adopt A Stream Foundation	\$ 200,000	none known
<b>Headwaters Restoration</b>																			
	South Fork Snoqualmie Road Decommissioning	07-HRA-008	Headwaters Restoration Above Falls and Dam	48 miles road abandonment and obliteration	Restoration Projects	Upland	Cutthroat, Rainbow	Most Pressing Need	Design Completed, Construction Completed, Feasibility Pending							10/15/2014	Mountains to Sound Greenway Trust, US Forest Service	\$ 1,025,000	Mountains to Sound Greenway Trust (\$126,000), Mt. Baker-Snoqualmie National Forest (\$126,000), Recovery Act (\$700,000)

Funding and New Project	Project Name	Project ID	Sub Basin Strategy Group	Project Performance	Plan Category	Habitat Type	Primary Species Benefiting	Sequence Rank	Current Project Status	Year 2014 Activity to be Funded	Year 2014 Estimated Budget	Year 2015 Activity to be Funded	Year 2015 Estimated Budget	Year 2016 Activity to be Funded	Year 2016 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	'Known Funding Sources
	Upper Snoqualmie River Knotweed Control and Riparian Restoration	07-HRA-030	Headwaters Restoration above Falls and Dam	1 acre knotweed removal along 16 miles of river	Restoration Projects	Riparian	Rainbow, Cutthroat	Need	Feasibility Pending	Construction	\$ 200,000	Construction	\$ 200,000	Construction	\$ 60,000	12/31/2016	King County DNR & Parks	\$ 460,000	King County DNR & Parks (\$25,000)
	Griffin Creek Natural Area Addition	07-HSR-023	Headwaters Secondary Restoration	25 acres acquired	Acquisition Projects	Instream	Steelhead	Pressing Need	Conceptual	Acquisition	\$ 100,000					12/31/2014	King County DNR & Parks	\$ 100,000	
	South Fork Skykomish Headwaters Acquisitions	07-HSR-008	Headwaters Secondary Restoration	'Protect up to 2,000 acres in headwaters of the South Fork Skykomish Watershed	Acquisition Projects	Upland	Chinook	Pressing Need	Feasibility Pending	Acquisition	\$ 3,000,000	Conservation Easement				12/31/2016	Forterra	\$ 9,050,000	
	South Fork Skykomish Acquisitions	07-HSR-019	Headwaters Secondary Restoration	Miller, Beckler, Foss, Tye Reach acquisitions	Acquisition Projects	Rivers/Stream s/Shoreline	Chinook	Pressing Need	Proposed							12/31/2015	Forterra, King County DNR & Parks	\$ 500,000	
	Alpine Baldy Road Decommissioning - U.S. Forest Service Roads 6066 & 6067	07-HSR-029	Headwaters Secondary Restoration	9 miles road treatments'	Restoration Projects	Upland	Coho, Bull Trout, Chinook, Steelhead			Construction		4.6 miles of decommission/storage treatment	\$ 170,000			10/28/2013	US Forest Service	\$ 215,000	Mt. Baker-Snoqualmie National Forest (\$74,980)
Fully Funded	Tokol Creek Fish Passage - Phase 2	07-HSR-014	Headwaters Secondary Restoration	fix the Chinook and steelhead barrier at the Tokol Creek hatchery	Restoration Projects		Steelhead, Chinook	Need	Design and Permitting	Construction	\$ 250,000					12/31/2014	WDFW	\$ 250,000	WA State Legislature: Jobs Now" bill; listed as part hatchery improvements, part passage. The passage component is supported by the current plan, while improvements to the hatchery need scrutiny under steelhead recovery planning.
	Lower Miller River Restoration	07-HSP-004	Headwaters Secondary Protection	.95 miles Revetment and levee removal along the Miller River and side channels; 7 acres riparian planting	Restoration Projects	Instream	Bull Trout	Most Pressing Need	Feasibility Completed	Design	\$ 60,000	Construction	\$ 200,000			12/31/2016	King County DNR & Parks, US Forest Service	\$ 280,000	King County DNR & Parks (\$50,000)
<b>Basinwide and Non-capital</b>																			
	WRIA 07 Fish Passage Barrier Prioritization - King County (Phase I - III 2013-2015) and Snohomish County (Phase I-2013)	07-BW-008	Mainstem Primary Restoration	twenty high priority culvert/tide-gates. Stream channels which appear to have been incorrectly mapped (based on current WDNR and KC hydro layers) or are currently unmapped and associated with identified culverts or	Non-Capital Projects	Rivers/Stream s/Shoreline, Riparian	Coho	Most Pressing Need	Conceptual; Proposed	GIS, Field Work, Data Entry	\$ 26,200	GIS, Field Work, Data Entry	\$ 22,200	Final Report	\$ 4,200	6/30/2016	Wild Fish Conservancy	\$ 600,000	
	Implement the Targeted Stewardship Model - King County and PRKC	07-NC-002	Basinwide		Habitat - protection and restoration	Restoration, outreach, education, technical assistance.	Chinook		Implementation	Restoration, outreach, education, technical assistance	\$500,000	Restoration, outreach, education, technical assistance	\$ 200,000	Restoration, outreach, education, technical assistance	\$ 200,000	Ongoing	KC, Partnership for Rural King County	\$ 900,000	
	Policy work conducted by basin partners?	07-NC-017	Basinwide		Habitat - protection and restoration												KC, SC, TT, SCL	\$ -	
	PBRS and landowner current use tax incentives	07-NC-009	Basinwide		Habitat Protection				Implementation	Implementation	\$100,000	Implementation	\$ 100,000	Implementation	\$100,000	Ongoing	King County	\$ 300,000	

Funding and New Project	Project Name	Project ID	Sub Basin Strategy Group	Project Performance	Plan Category	Habitat Type	Primary Species Benefiting	Sequence Rank	Current Project Status	Year 2014 Activity to be Funded	Year 2014 Estimated Budget	Year 2015 Activity to be Funded	Year 2015 Estimated Budget	Year 2016 Activity to be Funded	Year 2016 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	'Known Funding Sources
	Land-use specific stewardship	07-NC-003			Habitat - protection and restoration	Restoration, outreach, education, technical assistance.	Chinook		Implementation	Restoration, outreach, education, technical assistance	\$210,000	Restoration, outreach, education, technical assistance	\$ 210,000	Restoration, outreach, education, technical assistance	\$ 210,000	Ongoing	SC, KC, Tulalip Tribes, local jurisdictions, SCD, KCD, CLC, WSU	\$ 630,000	
	NPDES implementation	07-NC-004			Habitat - protection and restoration				Implementation								all local jurisdictions	\$ -	
	Provide basin steward staff.	07-NC-005			Habitat - protection and restoration	Restoration, outreach, education, technical assistance.	Chinook		Implementation	Restoration, outreach, education, technical assistance	\$210,000	Restoration, outreach, education, technical assistance	\$ 210,000	Restoration, outreach, education, technical assistance	\$ 210,000	Ongoing	SC, KC	\$ 630,000	
	Snoqualmie Watershed Water Quality Synthesis Report Implementation	07-NC-006			Habitat - protection and restoration				Implementation	Restoration, outreach, education, technical assistance	\$50,000	Restoration, outreach, education, technical assistance	\$ 50,000	Restoration, outreach, education, technical assistance	\$ 50,000	Ongoing	Snoqualmie Watershed Forum and King County	\$ 150,000	
	WSU Extension Beach Watchers Program	07-NC-007			Habitat - protection and restoration	Outreach and education.	Chinook		Implementation	Implement.	\$210,000	Implementation	\$ 70,000	Implementation	\$ 70,000	Ongoing	WSU Extension	\$ 350,000	
	Outreach specialist - Tulalip Tribes	07-NC-008			Habitat - protection and restoration				Implementation								Tulalip Tribes	\$ -	
	Public Beach Naturalist Program and Shore Stewards	07-NC-010			Habitat - protection and restoration				Implementation	Implementation	\$7,000	Implementation	\$ 7,000	Implementation	\$ 7,000	Ongoing	WSU extension	\$ -	
	Puget Sound Starts Here Campaign	07-NC-011			Habitat - protection and restoration		Not salmon-specific		Implementation									\$ -	
	School outreach: King County; Snohomish County; Nature Vision Blue Teams, SSTF REYs education program	07-NC-012			Habitat - protection and restoration	REYs education program work with 4 schools and approximately	Chinook		Implementation	Implementation	\$90,000	Implementation	\$ 90,000	Implementation	\$ 90,000	Ongoing	Stilly-Snohomish Fisheries Enhancement Task Force	\$ 270,000	
	Advocacy / watchdog?	07-NC-016			Habitat - protection and restoration												People for Puget Sound, Wild Fish Conservancy, Puget Soundkeepers Alliance	\$ -	
	Cascade Agenda	07-NC-020			Habitat - protection and restoration		Not salmon-specific										Cascade Land Conservancy	\$ -	

Funding and New Project	Project Name	Project ID	Sub Basin Strategy Group	Project Performance	Plan Category	Habitat Type	Primary Species Benefiting	Sequence Rank	Current Project Status	Year 2014 Activity to be Funded	Year 2014 Estimated Budget	Year 2015 Activity to be Funded	Year 2015 Estimated Budget	Year 2016 Activity to be Funded	Year 2016 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	'Known Funding Sources
	General Program Maintenance	07-NC-021			Habitat - protection and restoration		Chinook		Implementation	Staffing	\$300,000	Staffing	\$ 300,000	Staffing	\$ 300,000		Econet Participants...	\$ 900,000	
	General Program Maintenance	07-NC-022			Habitat - protection and restoration		Chinook		Implementation	Technical assistance	Not quantified	Technical assistance	Not quantified	Technical assistance	Not quantified			\$ -	
	Information Sharing	07-NC-023			Habitat - protection and restoration		Not salmon-specific										EcoNet, STORM, PWG, TC, PDC,	\$ -	
	Snohomish County Beach Watchers	07-NC-024			Habitat - protection and restoration				Implementation	Implementation	\$90,000	Implementation	\$ 90,000	Implementation	\$90,000	Ongoing	WSU extension	\$ 270,000	
	Snoqualmie Conservation Strategy	07-NC-013			Habitat Protection				Implementation								Stewardship Partners	\$ -	
	Habitat Protection Strategy	07-NC-014			Habitat Protection	Strategic, actionable habitat protection plan	Chinook		Implementation		\$220,000	Implement.	\$ 220,000	Implement.	\$220,000	Ongoing.	SC, KC, Tulalip Tribes	\$ -	EPA, Snohomish County, King County, Tulalip Tribes
	Skykomish Valley Conservation Projects	07-NC-015			Habitat Protection												Cascade Land Conservancy	\$ -	
	Shoreline Master Program Updates and Restoration Plans	07-NC-018			Habitat Protection				Implementation	Planning	\$50,000	Planning	\$ 50,000			2011	Cities in WRIA 7	\$ 100,000	Cities, Snoqualmie Watershed Forum and DOE grants
	TDR and PDR Development	07-NC-019			Habitat Protection												Cascade Land Conservancy, King County, Snohomish County	\$ -	
<b>Harvest, Hatchery, H-integration</b>																			
	Assessment of ecological interactions between hatchery and wild fish				Habitat, Hatchery		Chinook, coho, steelhead		underway	Sampling and data analysis	\$150,000	Sampling and data analysis	\$ 150,000	Sampling and data analysis	\$150,000	ongoing	Tulalip Tribes	\$ 450,000	
	Develop, communicate, and enforce fishing regulations				Harvest		Chinook, coho, chum, pink		ongoing	Convert the results of	Hard to tally up	Convert the results	Hard to tally up	Convert the results	Hard to tally up	ongoing	WDFW, Tulalip	\$ -	
	Estimate exploitation rates, reconstruct run sizes				Harvest		Chinook, coho		ongoing	Assemble CWT data i	Very difficult to	Assemble CWT da	Very difficult to	Assemble CWT da	Very difficult to	ongoing	WDFW, Tulalip	\$ -	
	Preseason fishery planning				Harvest		Chinook, coho, steelhead, chum, pink		underway	Annual planning	Very difficult to	Annual planning	Very difficult to	Annual planning	Very difficult to	ongoing	WDFW, Tulalip	\$ -	
	Hatchery escapement monitoring				Harvest, Hatchery		Chinook		Underway	State and Tribal hatchery sampling	\$10,000	State and Tribal hatchery sampling	\$ 10,000	State and Tribal hatchery sampling	\$10,000	ongoing	Tulalip and WDFW	\$ 30,000	
	Adipose fin removal				Harvest, Hatchery		Chinook, coho		underway	Adipose fin removal	\$60,000	Adipose fin removal	\$ 60,000	Adipose fin removal	\$60,000	ongoing	Tulalip Tribes	\$ 180,000	
	Coded-wire tagging				Harvest, Hatchery		Chinook, coho		underway	Tagging	\$40,000	Tagging	\$ 40,000	Tagging	\$40,000	ongoing	Tulalip Tribes	\$ 120,000	
	Fishery monitoring				Harvest, Hatchery		Chinook		Underway	Tribal fishery sampling	\$60,000	Tribal fishery sampling	\$ 60,000	Tribal fishery sampling	\$60,000	ongoing	Tulalip Tribes	\$ 180,000	
	Recreational fishery monitoring				Harvest, Hatchery		Chinook, coho		Underway	base recreational fishery sampling	[MAY BE ABLE TO GET THIS FROM WDFW]	base recreational fishery sampling	[MAY BE ABLE TO GET THIS FROM WDFW]	base recreational fishery sampling	[MAY BE ABLE TO GET THIS FROM WDFW]		WDFW	\$ -	
	Selective fishery monitoring				Harvest, Hatchery		Chinook		Underway	Selective fishery sampling	[WDFW SHOULD BE ABLE TO PROVIDE]	Selective fishery sampling	[WDFW SHOULD BE ABLE TO PROVIDE]	Selective fishery sampling	[WDFW SHOULD BE ABLE TO PROVIDE]		WDFW	\$ -	
	Direct assessment of gene flow in Chinook				Hatchery		Chinook		High Priority Not Funded	Genetic tissue sampling and data analysis	\$75,000	Genetic tissue sampling and data analysis	\$ 75,000	Genetic tissue sampling and data analysis	\$75,000	2015	Tulalip Tribes	\$ 225,000	
	Analysis of stock assessment samples				Hatchery		Chinook, coho		underway	Sample analysis	\$75,000	Sample analysis	\$ 75,000	Sample analysis	\$75,000	ongoing	Tulalip Tribes	\$ 225,000	

Funding and New Project	Project Name	Project ID	Sub Basin Strategy Group	Project Performance	Plan Category	Habitat Type	Primary Species Benefiting	Sequence Rank	Current Project Status	Year 2014 Activity to be Funded	Year 2014 Estimated Budget	Year 2015 Activity to be Funded	Year 2015 Estimated Budget	Year 2016 Activity to be Funded	Year 2016 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	'Known Funding Sources
	Straying reduction study				Hatchery		Chinook, coho		Not Funded	N/A	\$0	Differential tagging, imprinting and sampling	\$ 60,000	Differential tagging, imprinting and sampling	\$60,000	2016 for funding, 2021 for data recovery	Tulalip Tribes	\$ 300,000	
	Mass marking improvements				Hatchery		Chinook, coho, chum		Not Funded	Replace 12 old, small chillers (one marking system) with two commercial-grade chiller/marketing systems. Replace & upgrade wiring at hatchery to enable mass adipose fin marking without electrical fires	\$169,254	Differentially thermally mark 100% all (100%) Tulalip hatchery production (all species)	\$ -	Differentially thermally mark 100% all (100%) Tulalip hatchery production (all species): No funding requested	\$0	2011 for funding, thereafter no funding but needed for annual thermal 100% marking, sample recovery, analysis, contribution rate analyses (hatcheries, fisheries, or natural escapements), gene flow, hat/wild excel/genet interactions	Tulalip Tribes	\$ 169,254	
	Analysis of stock assessment samples				Hatchery		Chinook, coho		Not Funded	N/A	\$0	Construct and equip room for CWT extraction and reading at TSAL	\$ 60,000	Annually analyze CWTs extracted from Chinook/Coho in terminal fisheries/hatcheries/natural escapement: No funding requested	\$0	2012 for funding, thereafter no funding but equipment will be used annually to analyze CWTs extracted from Chinook/Coho in terminal fisheries/hatcheries/natural escapement	Tulalip Tribes	\$ 60,000	
	Analysis of stock assessment samples				Hatchery		Chinook, coho		Not Funded	Purchase tag-reading equipment	\$6,100	Annually analyze CWTs extracted from Chinook/Coho in terminal fisheries/hatcheries/natural escapement: No funding requested	\$ -	Annually analyze CWTs extracted from Chinook/Coho in terminal fisheries/hatcheries/natural escapement: No funding requested	\$0	2011 for funding, thereafter no funding requested to annually analyze CWTs extracted from Chinook/Coho in terminal fisheries/hatcheries/natural escapement	Tulalip Tribes	\$ 6,100	

Funding and New Project	Project Name	Project ID	Sub Basin Strategy Group	Project Performance	Plan Category	Habitat Type	Primary Species Benefiting	Sequence Rank	Current Project Status	Year 2014 Activity to be Funded	Year 2014 Estimated Budget	Year 2015 Activity to be Funded	Year 2015 Estimated Budget	Year 2016 Activity to be Funded	Year 2016 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	'Known Funding Sources
	Skykomish Chinook broodstock integration				Hatchery		Chinook		Underway	Collection of NOR broodstock and incorporation into WRH hatchery broodstock	\$12,000	Collection of NOR broodstock and incorporation into WRH hatchery broodstock	\$ 12,000	State and Tribal hatchery genetic NOR broodstock collection and incorporation into WRH hatchery broodstock	\$12,000	ongoing	Tulalip and WDFW	\$ 36,000	
	Thermal marking of Tulalip hatchery production				Hatchery		Chinook		Underway	Thermal marking during egg incubation	\$7,500	Thermal marking during egg incubation	\$ 7,500	Thermal marking during egg incubation	\$7,500	ongoing	Tulalip Tribes	\$ 22,500	
	Annual Snoqualmie and Skykomish smolt trap operations				H-integration		Chinook, coho		underway	Smolt enumeration and biological sampling	\$400,000	Smolt enumeration and biological sampling	\$ 400,000	Smolt enumeration and biological sampling	\$400,000	ongoing	Tulalip Tribes	\$ 1,200,000	
	Natural escapement monitoring				H-integration		Chinook		Underway	State and Tribal escapement sampling	\$60,000	State and Tribal escapement sampling	\$ 60,000	State and Tribal escapement sampling	\$60,000	ongoing	Tulalip and WDFW, Sno. PUD	\$ 180,000	
	Whidbey Basin Juvenile Salmon Origins	07-MON-03			H-integration													\$ -	
	Whidbey Basin Nearshore Marine Juvenile Salmonid Distribution	07-MON-04			H-integration													\$ -	
	Tulalip Stock Assessment Laboratory				H-integration		Chinook		Underway, Seeking expansion to CWT reading in 2011	Read scales and otoliths	\$25,000	Read scales and otoliths	\$75,000	Read scales and otoliths	\$75,000	ongoing	Tulalip Tribes	\$ -	
	Develop Steelhead Recovery Plan with NOAA.	07-NC-025			H-integration	Recovery planning.	Steelhead		Under development	Recovery plan development.	\$50,000	N/a	\$0	N/a	\$0	2010	NOAA with Tulalip Tribes, WDFW, SC, KC	\$ 50,000	
	Baseline monitoring of Juvenile Fish Use of Nearshore and Coastal Streams	07-MON-01			H-integration	Monitoring - develop monitoring plan.	Chinook		Implementation	Implementation	\$60,000	Implementation	\$60,000	Implementation	\$60,000	41274	Tulalip Tribes	\$ 180,000	
	Monitoring Fish (Smolt Traps)	07-MON-02			H-integration	Monitoring - develop monitoring plan.	Chinook		Implementation	Implementation	\$250,000	Implementation	\$250,000	Implementation	\$250,000	ongoing	Tulalip Tribes	\$ 750,000	
	Estimate magnitude and spatial distribution of natural spawning escapement				H-integration		Chinook, coho steelhead, chum, pink		underway	Natural escapement surveys and data analysis	[NEED FROM WDFW]	Natural escapement surveys and data analysis	[NEED FROM WDFW]	Natural escapement surveys and data analysis	[NEED FROM WDFW]	ongoing	WDFW	\$ -	
	Juvenile sampling				H-integration		Chinook, coho, steelhead		underway	Sampling and data analysis	\$150,000	Sampling and data analysis	\$150,000	Sampling and data analysis	\$150,000		Tulalip Tribes	\$ -	
	Passage of adult fish around Sunset Falls velocity barrier				Habitat		Chinook, coho steelhead		underway	Trapping and hauling	[NEED FROM WDFW]	Trapping and hauling	[NEED FROM WDFW]	Trapping and hauling	[NEED FROM WDFW]	Ongoing	WDFW	\$ -	WDFW