

## Nisqually Watershed Answers for Three-Year Work Program Questions:

### Consistency Question

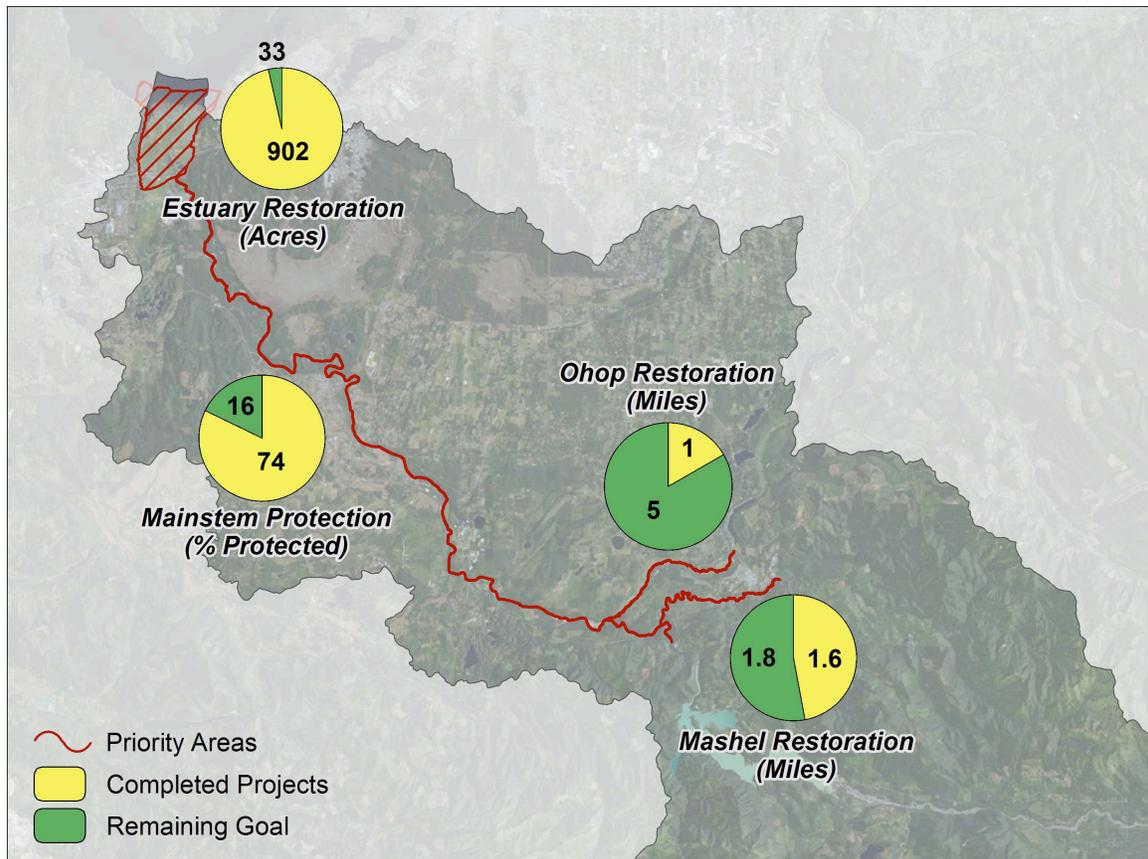
1. What are the actions and/or suites of actions needed for the next three years to implement your salmon recovery chapter as part of the regional recovery effort? (A template spreadsheet with general categories is provided to identify which actions and/or suites of actions are needed. Please note that you can use the HWS to produce a list of habitat actions)

We have habitat actions identified that are primarily focused on the Nisqually Estuary, the Nisqually River, the Mashel River, Ohop Creek, and the South Puget Sound nearshore. See the attached documents for descriptions of the types of actions needed in each of these areas (Appendix B). In addition we describe needed actions in our hatchery and harvest management that will be essential to lead us to recovery.

### Pace/Status Question

2. What is the status of actions underway per your recovery plan chapter? Is this on pace with the goals of your recovery plan?

We have made some significant progress in habitat protection and restoration in the last few years, especially in the Nisqually estuary where we have nearly completed our major restoration work. See the figure below for our goals for each of our priority habitat areas and the progress we have made since 2000.



Additionally, we have updated the stock management components of our recovery plan and will implement these actions in 2011. If we are to complete the rest of our goals in the next 10 years we will need to receive significant funding to implement the remaining projects.

Our primary concern is that while we are making significant forward progress in protection and restoration of habitat in the Nisqually watershed we seem to be losing habitat rapidly in the Puget Sound nearshore.

3. What is the general status of implementation towards your habitat restoration, habitat protection, harvest management, and hatchery management goals? Progress can be tracked in terms of ‘not started, little progress, some progress, or complete’ or in more detail if you choose.

Habitat restoration – some progress in watershed, little progress in the nearshore.

Habitat protection – some progress in the watershed, little progress in the nearshore

Harvest management – some progress this year

Hatchery management – some progress this year

#### *Sequence/Timing*

4. What are the top implementation priorities in your recovery plan in terms of specific actions or theme/suites of actions? How are these top priorities being sequenced in the next three years? What do you need to be successful in implementing these priorities?

The top priorities are described in the attached documents in more detail. In brief summary the top habitat priorities are completion of the Estuary Restoration, protection of the Nisqually mainstem, protection and restoration of the Mashel River, protection and restoration of Ohop Creek, and protection and restoration of the Puget Sound nearshore. The top stock management priority is to manage the population to allow the development of a natural origin stock that is locally adapted to the Nisqually watershed. This involves both hatchery and harvest management actions that are explained in the attached documents.

The high priority habitat actions are being sequenced based on landowner willingness and logistics considerations for next steps in the major projects.

The primary thing we need to be successful in these projects is the funding necessary to implement them and continued funding for the capacity to coordinate their implementation.

#### *Next Big Challenge*

5. Do these top priorities reflect a change in any way from the previous three-year work program? Have there been any significant changes in the strategy or approach for salmon recovery in your watershed? If so, how & why?

The most significant change this year is the decision to develop a stepping stone integrated hatchery program that will allow us to begin reversing the gene flow in our Chinook stock. In previous iterations of the plan we were planning a segregated program, however recent modeling suggests it would be difficult for us to achieve long term sustainable success without trying a stepping stone integrated program.

6. What is the status or trends of habitat and salmon populations in your watershed?

In the Nisqually watershed salmon habitat has been improving as we implement major habitat protection and restoration projects in the watershed. The work completed in the Nisqually estuary last year is expected to contribute over time to a significant increase in salmonid abundance in the watershed. Significant projects completed in the Ohop and Mashel subbasins are expected to make a contribution to the life history diversity of Nisqually Chinook.

7. Are there new challenges associated with implementing salmon recovery actions that need additional support? If so, what are they?

There are not new challenges, however there are continuing old challenges including inadequate funding for projects and capacity to coordinate and implement projects and weak regulations that don't protect shorelines.

## **Nisqually Watershed Chinook Salmon Recovery Plan 3 year work program 2011-2013**

### **Introduction**

Over the last few years in the Nisqually Watershed significant advances in salmon habitat restoration have been made towards addressing the watershed's habitat restoration priorities in the Nisqually Delta, Mashel River, and Ohop Creek. Habitat protection efforts also advanced steadily, ensuring that the quality and quantity of Nisqually salmon habitat will only increase over time. Additionally, the Nisqually Chinook management partners (Nisqually Tribe, WDFW, and others) have been busy developing stock management actions that will lead to Nisqually Chinook recovery while still preserving sport and commercial harvest opportunities. The next three years will be characterized by bold stock management actions and continued focused restoration and protection initiatives in Ohop Creek, the Nisqually River and estuary, and the Mashel River. In order to monitor and adaptively manage the impacts of major habitat initiatives and stock management actions, an annual review process (APR) has been initiated that brings all of the harvest, hatchery, and habitat activities into one transparent planning and review process which results in an annual Nisqually Chinook Stock Management Action Plan (Appendix A).

Large scale habitat restoration projects in all three of the priority restoration areas of the Nisqually watershed (Nisqually River estuary, Mashel River, and Ohop Creek) were implemented over the last three years. This three year work program includes work to finish up and monitor the results of these projects and to begin the work to develop and implement the next phase of restoration in each of these areas. More details about work we have identified with our partners in the Puget Sound nearshore are also included. These nearshore areas are outside of our official watershed/lead entity boundaries however we are including them because protection and restoration of Puget Sound nearshore habitat is one of the most critical habitat actions necessary to recover Nisqually Chinook.

The Nisqually Chinook stock management partners have completed a Nisqually Chinook Stock Management Plan (NCSMP) that redefines the relationship between the Nisqually Chinook population and the harvest, hatchery, and habitat management components. The purpose of the plan is to ensure that we take strategic and scientifically defensible steps to restore a self-sustaining run of natural origin Nisqually Chinook while maintaining a successful hatchery program that will allow for continued harvest. In order to reflect the adoption of the NCSMP, we have changed the short term (10 year) objectives to capture our new indices of success. Many of the primary actions in the NCSMP will be implemented in 2011, some of these include: construction and operation of a seasonal weir on the mainstem Nisqually River; operation of the seasonal weir to exclude all identifiable (marked, tagged, or marked and tagged) hatchery origin strays; collection of up to 120 natural origin returns to start an integrated and stepping stone hatchery program; a phased reduction in the total exploitation rate on natural origin Nisqually

Chinook; initiate a study to evaluate the effectiveness of commercial selective fishing gear; and begin a robust monitoring and evaluation program. For more detail about specific 2011 actions see the attached 2011 Nisqually Chinook Stock Management Action Plan (Appendix A).

Over the next three years we will also be working to improve our adaptive management monitoring and evaluation efforts. This includes building off of the 2011 ‘all H’ Nisqually Chinook Management annual review to include a more detailed habitat monitoring strategy, stock status metrics, in-season updates, as well as data management and reporting.

Implementation of the Nisqually Chinook Recovery Plan has been ongoing since the completion of the plan in 2001. Much of the last ten years has been spent continuing the work to protect key salmon habitat areas and developing specific habitat projects that target the plan’s high priority stream reaches. We currently have seventy four percent of the mainstem Nisqually that is used by salmon under protective ownership. Large scale restoration projects in the estuary, Ohop Creek, and the Mashel River were completed in the last three years. Restoration project monitoring has demonstrated that salmon respond quickly and positively to the well designed large scale projects. The additional projects proposed in this work program will increase protective ownership of habitat to over 75 % of the anadromous mainstem river shoreline, and will substantially advance the major habitat restoration work identified in 3 out of the 4 main priority restoration areas.

Recent work done in the Nisqually to look closely at integration of our habitat, hatchery and harvest actions has led us to conclude that we need to take aggressive actions in each of these areas if we are to be successful in making a major contribution to the recovery of Chinook salmon in the Puget Sound ESU. The current total exploitation rate on natural origin Nisqually Chinook (including Alaska, Canada, Puget Sound and in-river fisheries) must be reduced. However, this will not allow the natural stock to become self-sustaining unless we also reduce the proportion of hatchery origin fish that stray and spawn with natural origin fish while infusing the hatchery component with some natural fish in order to mitigate for any hatchery origin fish straying. This work program contains projects and programs that will allow us take those actions. The resulting increase in the fitness of Nisqually Chinook will enable the population to realize the full potential of ongoing habitat restoration and protection efforts (Figure 1).

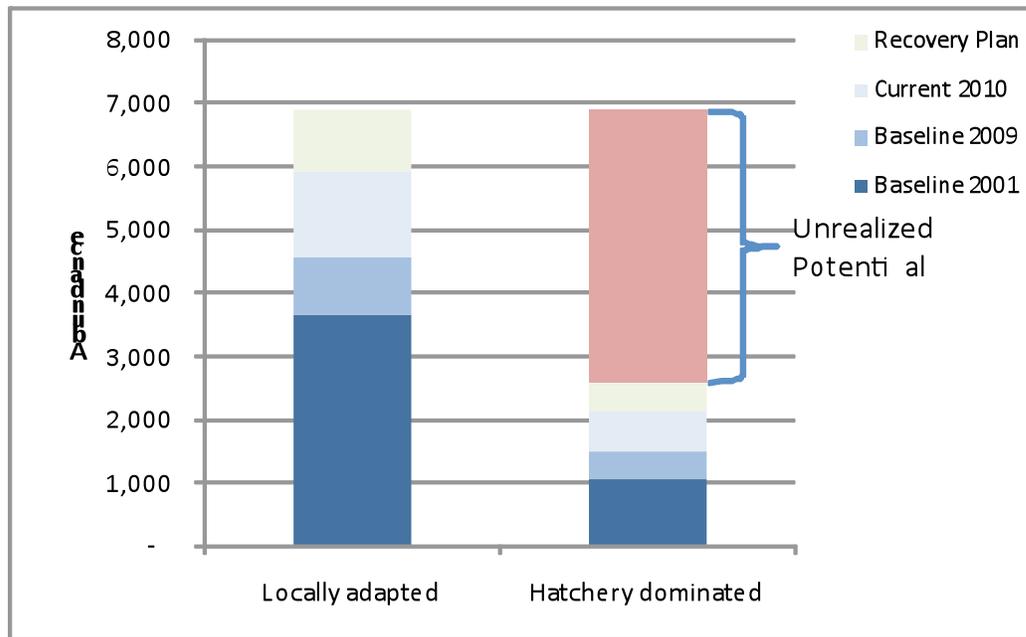


Figure 1. Ecosystem Diagnostic and Treatment Nisqually Chinook abundance estimates of a fully fit Chinook population versus a hatchery-dominated Chinook population in relation to 2001, 2009, 2010, and full implementation of Recovery Plan habitat conditions.

We have done the work in Nisqually to identify the key actions we need to take to recover Nisqually Chinook and we have laid the groundwork in the last ten years to allow those actions to take place. Most of the major priority actions we have identified that are necessary to recover Nisqually Chinook are incorporated into this plan. Many of the high priority projects listed in this plan are ready to be implemented as proposed if the funding becomes available to support the work necessary. The primary limiting factor in the implementation of our plan is securing the necessary funds to implement the actions we are including in this work program.

The final high priority protection and restoration habitat priority in our plan that has had the least amount of progress made on it is the Puget Sound nearshore. Our modeling continues to indicate that this nearshore habitat is critical to the survival and abundance of our fish. This habitat however falls outside of our watershed/lead entity’s designated area but we have still chosen to list specific projects and initiatives in our plan to indicate the great importance of this work in order to recover Nisqually Chinook. The success of this part of our plan is dependent on the success of Puget Sound as a region and of the individual watershed leads that are accountable for this habitat to protect and restore these areas.

***LONG TERM GOALS FOR NISQUALLY RIVER CHINOOK***

1. Assure natural production of Chinook in perpetuity by providing high quality, functioning habitat and by developing a self-sustaining, naturally spawning population with diverse geographic distribution. Our long-term projection of the benefits of improved population fitness and habitat potential suggests that the terminal run can regularly exceed 2,000 adults.
2. Assure a sustainable annual terminal harvest of 10,000 to 15,000 Chinook.
3. Provide significant contributions to ecosystem functions.
4. Secure and enhance natural production of all salmonids.
5. Assure that the economic, cultural, and social benefits derived from the Nisqually ecosystem will be sustained in perpetuity.

***10 YEAR OBJECTIVES FOR ACHIEVING LONG TERM NISQUALLY RIVER CHINOOK GOALS***

**Short term (10 year) conservation objectives:** Integrate harvest, hatchery, and habitat actions to move towards the long-term goal of a self-sustaining naturally-spawning population of Chinook in the Nisqually Basin.

- ⌚ Manage harvest on natural-origin Nisqually Chinook to not substantially impede the opportunity for the population to grow towards the long-term recovery goal. We have identified a total exploitation rate no higher than 47% by 2014.
- ⌚ Manage escapement composition (hatchery- and natural-origin) for the population component upstream of weir to achieve a four-year moving average proportion of hatchery origin spawners (pHOS) that is less than 10%.
- ⌚ In order to reduce impacts of hatchery fish spawning in nature: Develop a hatchery program that has a genetic continuity to the natural population achieved by a 600,000 fish release integrated program with a proportion of natural origin broodstock (pNOB) of 25% and a 3.4 million harvest program with 100% broodstock taken from integrated hatchery return.

**Short term (10 year) harvest objectives:** Manage pre-terminal and terminal fisheries to maximize catch of Nisqually River hatchery-origin Chinook:

- ⌚ Manage pre-terminal fisheries to selectively harvest Nisqually hatchery Chinook while not exceeding the total exploitation rate target of 47% (by 2014) on natural-origin Nisqually Chinook.
- ⌚ Develop and implement selective gear methods in the Nisqually terminal tribal fishery to achieve the harvest goal of 10,000 to 15,000 hatchery Chinook (60% terminal rate) while reducing impacts to natural-origin Chinook (20% terminal rate).

**Habitat objective:**

Utilize protection and restoration actions to support the stock objective.

- ⌚ *Protection component:* No further degradation in the Nisqually watershed's and Puget Sound's ability to support the productivity, abundance, and life history diversity of natural origin Nisqually Chinook.
- ⌚ *Restoration component:* Restore habitat in the Nisqually watershed and in Puget Sound to support a predicted increase in natural origin Nisqually Chinook productivity, abundance, and life history diversity.

Implement the suite of habitat projects developed during the EDT planning process and listed in the 2001 Nisqually Chinook Recovery Plan. Relative to the 2001 baseline, the modeled cumulative benefit of the habitat actions is an increase in the productivity of the Chinook population from 3.4 to 5.0 and an increase in the watershed's capacity from 5211 to 8616 Chinook. Additionally, the habitat actions are predicted to increase the EDT life history diversity index from 80% to 93%. The EDT productivity, abundance, and life history diversity parameters are theoretical targets that do not account for the effects of fitness loss, harvest rates, hatchery interactions, and other (e.g., stochastic) impacts. Spatial structure is also predicted to increase as habitat is restored. Improvements in the Chinook stock parameters are expected to occur over multiple generations after habitat, harvest, and hatchery actions are taken.

**Community support objectives:**

- ⌚ Increased local community awareness of and support for high priority actions to recover Nisqually and Puget Sound salmon.
- ⌚ Increased regional, state, and national community awareness of and support for high priority actions to recover Puget Sound salmon.

### **3 YEAR WORK PLAN IMPLEMENTATION EXPECTATIONS**

#### Stock objective progress:

- ⌚ Make significant progress towards reducing the combined pre-terminal and terminal harvest in order to achieve our conservation and harvest objectives.
- ⌚ Reduce pHOS over the next five years to an average of less than 10% of the spawning population above the weir.
- ⌚ Continue to implement habitat actions that result in increased productivity, capacity, and life history diversity for Chinook and other salmonids.

#### Habitat objective progress:

Projects implemented that, together with stock fitness gains, will increase the ability of the habitat to support a Nisqually fall Chinook productivity and capacity from its baseline estimated values of 3.4 and 5211 to 5.0 and 8616 and increase the life history diversity index from 80% to 93%.

#### Community support objective progress:

##### Local community support:

- ⌚ Increase in percentage of Nisqually watershed residents who are aware of Nisqually salmon recovery efforts.
- ⌚ At least one third of currently unwilling landowners in high priority restoration areas on the Mashel River and Nisqually mainstem will give permission for restoration projects on their property.
- ⌚ An increase of at least 100 active Nisqually Stream Steward volunteers.
- ⌚ Increase in local government support for high priority salmon habitat projects.

##### Regional, state, and national community support:

- ⌚ Increase in percentage of regional, state, and national community members that are aware of Puget Sound salmon recovery efforts and are supportive of recovery priorities.

Please see the attached 2011 Nisqually Chinook Management Action Plan (Appendix A) and the 2011 Nisqually Salmon Recovery Habitat Restoration and Protection Priorities List (Appendix B) for more detail about specific Chinook recovery actions.

## Appendix A

# 2011 Nisqually Chinook Stock Management Action Plan

# 1 Harvest

## Preseason Nisqually Run Size 2011

Natural-origin recruit (NOR) run size to Nisqually River: 1,644 (recent 4 yr average run size to Nisqually River)

Hatchery-origin recruit (HOR) run size to Nisqually River: 29,838 to 4B with unknown number removed between 4B and Nisqually

### 1.1 Set Harvest Regulations

Objective:	Achieve terminal harvest rate on NORs of 40% in the tribal net fishery
Method:	<ul style="list-style-type: none"> <li>⌚ Reduce harvest by reducing number of days open, weeks open and change in fishery boundaries.</li> <li>⌚ No in-season update planned for 2011, may modify harvest if hatchery escapement is critically low</li> </ul>
2010 Results	The 2010 total exploitation rate exceeded the pre-season plan of 65% total exploitation rate. The terminal treaty net harvest rate of 40% was exceeded in 2010.
2011 Update	The 2011 goal is a total exploitation rate to not exceed 65% with a likely 40% terminal harvest rate. The terminal rate will be refined during the harvest management meetings as pre-terminal fisheries are developed.

### 1.2 Pre-season Forecast and In-Season Update Tools and Protocols

Objective:	Develop forecast tools and protocols for pre-season and in-season updates
Potential Methods:	<ul style="list-style-type: none"> <li>⌚ Brood year escapement</li> <li>⌚ Outmigration juveniles</li> <li>⌚ Jack count</li> <li>⌚ Preseason terminal run size from FRAM</li> <li>⌚ Ocean survival index</li> <li>⌚ Catch per unit effort (CPUE) unmarked fall Chinook in freshwater terminal net fishery</li> <li>⌚ In-season test fishery</li> </ul>
2010 Results	Based on the 2010 outcome staff identified the need to revise the pre-season terminal area management worksheet to better account for change in effort and greater catch during the first day of an opening.
2011 Update	For 2011 the actions are: <ol style="list-style-type: none"> <li>1) review and update the terminal area harvest worksheet and improve its ability to estimate harvest rate by weekly openings/closures,</li> <li>2) evaluate use of the weir and hatchery rack data to monitor run timing and abundance to update fishery openings and closures, and</li> <li>3) evaluate change in ratio or run-timing analysis to make an in-season update to update fishery schedule.</li> </ol>

### 1.3 Natural and Hatchery Composition in Tribal and Sport Catch

Objective:	Estimate hatchery and natural composition in tribal (Nisqually Indian Tribe) and sport catch (Washington Department of Fish and Wildlife [WDFW])
2010 Results	Catch composition was estimated for Tribal commercial catch, information from WDFW for the sport fishery is coming
2011 Update	No change to methods for tribal fishery. WDFW noted that the sport fishery post-season analysis will use information from the on-going creel survey study in the Nisqually to better estimate non-landed mortality of natural-origin fish.

### 1.4 Selective Harvest

Objective:	Develop methods to selectively harvest hatchery fish while releasing natural origin fish with low mortality.
Method:	<ul style="list-style-type: none"> <li>⌚ Test gear (fishing gear and recovery boxes) during 2011 Chinook migration.</li> <li>⌚ Develop selective fishery evaluation plan for implementation in 2011</li> <li>⌚ Summarize relevant historic data, e.g., catch pattern</li> </ul>
2010 Results	No progress
2011 Update	Nisqually Tribe harvest program is leading a working group to develop a study plan to test several types of gear acceptable to tribal fishers and that will be effective to allow the release of unmarked Chinook. Study will be implemented in 2011.

### 1.5 Reporting and Recording

Objective:	Develop data management and reporting plan
Method:	Use existing methods and protocols
2010 Results	On-going
2011 Update	Additional work is needed

### 1.6 Implementation: Operations

Objective:	Update and refine operations budget and staffing
Method:	Estimate \$165,000 to test fishery plan
2010 Results	On-going
2011 Update	With new tasks (e.g. need to test selective gear) the group recognized the need to evaluate priorities and management needs.

## Weir Operations

### 1.7 Implementation

Objective:	Test and implement systems, operations at various seasonal flows, refine operating procedures, and train staff in operations and safety for staff and fish. Develop an operating manual prior to entering management season.
Method:	<ul style="list-style-type: none"> <li>⌚ Test and perfect system operations</li> <li>⌚ Operate trap to exclude marked Chinook upstream of weir</li> <li>⌚ On-site staff will manage security, ladder, and weir</li> </ul>
2010 Results	The weir was not installed as planned
2011 Update	Weir is planned for 2011 with operation from July 1 - October 30. Operations will be supervised by NIT and they will seek help from WDFW.

### 1.8 Implementation: Escapement Objectives

Objective:	Pass upstream unmarked (no adipose or CWT) of all species. Remove at weir all identified hatchery-origin adults. The objective for 2011 is to manage for low pHOS.
Method:	Remove all marked (ad-clipped and/or CWT - hatchery-origin) fish at weir
2010 Results	The weir was not installed as planned
2011 Update	<p>Release all unmarked species and remove all marked hatchery Chinook. Manage weir for objectives for natural composition and abundance targets identified during 2011 APR.</p> <ul style="list-style-type: none"> <li>⌚ Need to develop protocols and schedule for evaluating timing, abundance, and broodstock collection.</li> <li>⌚ Evaluate timing of adults in hatchery return, fishery, and escapement to model projected timing at weir to make projections for 2011.</li> </ul>

### 1.9 Monitor Populations: Escapement Enumeration

Objective:	Enumerate fish removed at weir and fish passed upstream (all species)
Method:	<ul style="list-style-type: none"> <li>⌚ Hand count on sorting tables</li> <li>⌚ Record automated count from Northwest Marine Technology (NMT) counters at trap entrance to ensure trap is not overloaded</li> <li>⌚ Enumerate and record composition at weir and fish passed upstream</li> </ul>
2010 Results	The weir was not installed as planned
2011	A work group will develop operation guidelines for weir and fish sampling

Update	protocols.
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### 1.10 Monitor Populations: Evaluate Run Timing

Objective:	Estimate daily and weekly run timing at weir relative to timing in fisheries for all species including pink salmon
Method:	Collect daily, weekly, seasonal counts compared to Tribal and WDFW catch data
2010 Results	The weir was not installed as planned
2011 Update	Set one or two status reviews during the adult migration season to review projected adult run size, fish behavior at the weir, and number of fish passed upstream to date. A contingency plan to modify operations will be developed prior to the season to address alternatives if information at these status reviews suggests the run is radically different than expected or the weir is adversely affecting fish behavior.

### 1.11 Monitor Populations: Collect Biological data

Objective:	Sampling plan and collect biological data in 2011
Method:	<ul style="list-style-type: none"> <li>⌚ Sample all unmarked fish for scales</li> <li>⌚ Collect tissue samples Chinook passed upstream</li> <li>⌚ Sample all fish for adipose clip, coded wire tag (CWT )(detection), length, and sex</li> <li>⌚ Recover CWTs at weir in 2011</li> </ul>
2010 Results	The weir was not installed as planned
2011 Update	A work group will develop biological sampling protocols (including 100% genetic samples for NWIFC) and protocols to evaluate weir effects (delay and handling stress).

### 1.12 Update Key Assumptions: Weir efficiency

Objective:	Estimate weir efficiency – Chinook only
Method:	<p>Conduct marking study</p> <ul style="list-style-type: none"> <li>⌚ Tag all Chinook passed upstream with a uniquely numbered jaw tag</li> <li>⌚ Record date and time collected and released</li> <li>⌚ Sample all carcasses for jaw tags during spawning ground surveys, record time and location of recoveries</li> <li>⌚ Estimate efficiency using rate jaw tags recovered in escapement</li> </ul>
Other	Need to purchase jaw tags – tagging and data collection are part of operating cost
2010 Results	The weir was not installed as planned

2011 Update	Planned for 2011, will need to work with NWIFC statistician on specifics of sample design.
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### 1.13 Update Key Assumptions: Weir-Induced Mortality

Objective:	Estimate weir induced mortality all species
Method:	<ul style="list-style-type: none"> <li>⌚ Record fish condition at release (1-5 injury scale)</li> <li>⌚ Record fallbacks, injured fish at weir next morning</li> </ul>
2010 Results	The weir was not installed as planned
2011 Update	A work group will develop operation guidelines for weir and fish sampling protocols.

### 1.14 Update Key Assumptions: Natural Spawning Downstream of Weir

Objective:	Estimate incidence of natural spawning escapement downstream of weir, weir delay, and trap rejection
Method:	Observations & surveys spawning presence downstream of weir
2010 Results	The weir was not installed as planned
2011 Update	Planned for 2011

### 1.15 Implementation: Brood Stock Collection at Weir

Objective:	Develop operating plan to collect brood stock at weir to initiate integrated and stepping-stone hatchery programs.
Method:	<ul style="list-style-type: none"> <li>⌚ New truck and new adult transport tank to move fish to Kalama for holding</li> <li>⌚ Short term recovery tubes</li> <li>⌚ Onsite live box to hold fish prior to transport</li> <li>⌚ Prepare operating manual</li> </ul>
Other:	New truck (\$34,000) and transport tank (\$10,000) via Bureau of Indian Affairs (BIA) funding
2010 Results	Truck and transport tank purchased in 2010
2011 Update	Planned broodstock collection of 120 unmarked Chinook collected at weir. This number may be less depending on the in-season runsize update consistent with the Chinook management plan rules. The decision was made to spawn 105 natural-origin adults with Kalama Creek hatchery returns to support the entire Kalama Creek program of 600,000 releases. The number of unmarked fish collected at weir (120 fish) includes an adjustment for unmarked hatchery-origin fish in return (assume 95% mark rate) and a pre-spawn mortality of <10%.

### 1.16 Reporting and Recording

Objective:	Develop and implement data management plan
Method:	<ul style="list-style-type: none"> <li>⌚ Develop daily data sheets</li> <li>⌚ Enter data to database daily</li> <li>⌚ Evaluate electronic data collection methods</li> <li>⌚ Report trap counts and fish passed upstream on a weekly, monthly, annual basis to Nisqually NR staff, WDFW, and National Oceanic and Atmospheric Administration (NOAA) (per permit requirements)</li> </ul>
2010 Results	The weir was not installed as planned
2011 Update	A work group will develop operation guidelines for weir and fish sampling protocols.

### 1.17 Implementation: Operating Budget and Staffing

Objective:	Update and refine operating budget and staffing
Method:	Operating budget estimated at \$330,000 (May 2010)
2010 Results	On-going
2011 Update	No revisions, staffing needs to be developed as operation plan is developed.

## 2 Hatchery

### Planned Hatchery Brood Stock and Release – BY 2011

#### Clear Creek Program

- ⌚ Broodstock: approximately 2,300 adults
- ⌚ pNOB: 0%
- ⌚ 3.4 million release

#### Kalama Creek Program:

- ⌚ Broodstock: approximately 400 adults
- ⌚ pNOB: 25%, broodstock collection will include additional fish to account for a 10% pre-spawn mortality and unmarked hatchery fish in broodstock collected
- ⌚ 600,000 release

#### 2.1 Hatchery Operations: Surplus Hatchery Returns

Objective:	Develop plan for managing expected hatchery surplus in 2010
Method:	<ul style="list-style-type: none"> <li>⌚ Establish fish giveaway program</li> <li>⌚ Strip surplus females for egg sales (caviar)</li> <li>⌚ Plant carcasses</li> </ul>
Other:	No additional costs, egg sales revenue approximately \$6k–20K used for new hatchery equipment and supplies
2010 Results	Successful
2011 Update	Apply same methods as 2010. Test fishery evaluation and need to compare timing at hatchery and weir will require additional sampling of hatchery return.

#### 2.2 Hatchery Operations: Broodstock

Objective:	Brood stock collection using hatchery returns and natural-origin fish collected at weir
Method:	Apply existing adult collection and spawning protocols
2010 Results	The 2010 broodstock based solely on hatchery returns to Clear Creek and Kalama Creek.
2011 Update	Integrated program (develop 2011 broodstock protocols) <ul style="list-style-type: none"> <li>⌚ Collect unmarked Chinook at weir</li> <li>⌚ Transport (transport tank and tubes)/handling &amp; marking protocols</li> <li>⌚ Holding protocols (use 20' circulars to hold separately from rest of hatchery fish, ability to sort &amp; grade, and reduce handling)</li> <li>⌚ Evaluate pre-spawn mortalities</li> </ul>

	<ul style="list-style-type: none"> <li>⌚ Develop spawning protocols for integrated program</li> <li>⌚ Data collection and performance standards</li> <li>⌚ Record in-hatchery and post-release survival performance of integrated program.</li> <li>⌚ Hatchery work group will complete a hatchery protocols and performance standards</li> </ul>
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### 2.3 Hatchery Operations: Incubation, Rearing and Marking

Objective:	Incubate, rear, and release BY 2011 600K Kalama and 3.4 million Clear Creek, achieve at least 95% adipose mark rate in release
Method:	<ul style="list-style-type: none"> <li>⌚ Apply existing protocols</li> <li>⌚ Ensure funding and schedule for WDFW automated trailers</li> <li>⌚ Marking: 200k CWT only, 200k CWT/ad clip, remainder ad clip only</li> </ul>
2010 Results	Broodstock and release went as planned for 2010.
2011 Update	<p>The fish released in 2012 will be the first group with the new marking scheme.</p> <p>Marking of 2011 Brood:</p> <ul style="list-style-type: none"> <li>⌚ Integrated/Kalama Creek Release - 75k AD/CWT and 525k CWT only</li> <li>⌚ Harvest/Clear Creek Release - 3.3 million Ad only and 100k Ad/CWT</li> </ul>

### 2.4 Monitor and Record Information: Update Status and Trends

Objective:	Record number and composition of brood stock, number of smolts released, fish marking
Method:	<ul style="list-style-type: none"> <li>⌚ Complete hatchery program data sheets</li> <li>⌚ Report annually to NWIFC</li> </ul>
2010 Results	On-going - hatchery broodstock information was provided in December to complete the 2010 Status and Trends analysis
2011 Update	The integrated broodstock will require additional information for the Status and Trends analysis.

### 2.5 Implementation: Operating Budget and Staffing

Objective:	Update and refine operating budget and staffing
Method:	Review budget and staff requirements
2010 Results	On-going - no issues reported
2011 Update	Planned for 2011 - may need additional staffing to operate the integrated broodstock program.

## 2.6 Implementation Planning: Short Term

Objective:	Develop plan for natural-origin brood stock objective (weir permit stated 105 adults for 600K release program), update hatchery and genetic management plan (HGMP) to reflect changes in plan
Method:	<ul style="list-style-type: none"> <li>⌚ Collect 120 unmarked adults distributed over entire run timing at weir for a 600,000 integrated program release from Kalama.</li> <li>⌚ Broodstock objectives for harvest program are for 3.4 million release from Clear Creek.</li> </ul>
2010 Results	On-going
2011 Update	Need to complete the HGMP update by start of fall broodstock season. The number of unmarked fish to be taken for broodstock needs to be adjusted upwards to account for unmarked hatchery fish and pre-spawn mortality.

## 2.7 Implementation Planning: Short Term

Objective:	Develop brood stock management plan and spawning protocols for adult return of integrated program
Method:	Initiate planning process for the logistics of integrated fish returning to Kalama Creek and use of these fish in harvest program at Clear Creek
2010 Results	On-going
2011 Update	Need to develop protocols for integrated broodstock program and use of these fish in harvest program. Integrated fish will return in 2014 (3 yr olds).

## 2.8 Implementation Planning: Short Term

Objective:	Develop objectives for stepping stone harvest program
Method:	<ul style="list-style-type: none"> <li>⌚ Initiate planning process to be prepared in 2014 to use integrated returns.</li> <li>⌚ Release fish at a time and size that maximizes survival to adult</li> </ul>
2010 Results	On-going
2011 Update	On-going - first returns of integrated fish to use in stepping stone program will be in 2014 (3 yr olds)

## 2.9 Implementation: Short Term

Objective:	Develop rearing and release objectives for integrated and stepping stone programs
Method:	⌚ Initiate planning process

	⌚ Release fish at a time and size that maximizes survival to adult
2010 Results	On-going
2011 Update	On-going

## 2.10 Implementation Planning – Long term

Objective:	Develop plan for moving all Chinook production (4 million) to Clear Creek
Method:	<ul style="list-style-type: none"> <li>⌚ Identify planning process and critical milestones.</li> <li>⌚ Evaluate Clear Creek facility changes, repairs, and expansions required for 4 million fish,</li> <li>⌚ Integrated and harvest program fish must be segregated until fish are of size to mark 200fpp (March/April).</li> <li>⌚ Identify and pursue funding for facility changes, repairs and expansions</li> </ul>
2010 Results	On-going
2011 Update	On-going

### 3 Habitat Objectives

#### 3.1 Habitat Project Implementation: Freshwater

Objective:	Mashel River Phase IIB – install 10 additional log jams
Method:	Manage contractor and supervise construction
2010 Results	Project completed
2011 Update	Monitor adjacent DOT log jam project to ensure consistency with restoration objectives

#### 3.2 Habitat Project Implementation: Freshwater

Objective:	Activate new channel in Ohop Creek and monitor results
Method:	Monitor construction progress
2010 Results	The channel was activated on schedule.
2011 Update	Evaluate channel response to winter flows and fish use in spring and summer of 2011. Report observations and conclusions at 2012 APR.

#### 3.3 Habitat Project Implementation: Freshwater

Objective:	Continue riparian planting program
Method:	<ul style="list-style-type: none"> <li>⌚ Maintenance of past riparian planting projects</li> <li>⌚ Planting of native trees and shrubs in Ohop, Wilcox Flats, North Powell complex on mainstem</li> </ul>
2010 Results	A total of 38,000 plants were installed across 48 acres along Ohop Creek, Tanwax Creek and the Mashel River. Maintenance of past riparian plantings along Ohop Creek, Tanwax Creek, the Mashel River, at Wilcox Flats, at the Braget estuary and at the North Powell complex included activities such as irrigation, weed control and plant protection tube repair and removal.
2011 Update	A total of 37,700 plants are being installed across 49 acres along Ohop Creek, Tanwax Creek and the Mashel River. Maintenance of past riparian plantings along Ohop Creek, Tanwax Creek, the Mashel River, at Wilcox Flats, and at the Braget estuary will include activities such as irrigation, weed control and plant protection tube repair and removal.

#### 3.4 Habitat Project Implementation: Freshwater

Objective:	Continue salmon carcass placement for nutrient enhancement, to
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	educate/involve community in salmon enhancement, and to use surplus carcasses in a productive manner.
Method:	<ul style="list-style-type: none"> <li>⌚ Identify priority areas</li> <li>⌚ Distribution of carcasses to priority areas</li> </ul>
2010 Results	Carcass plants were conducted as planned.
2011 Update	At the 2011 APR the benefits of the carcass placement program were discussed. Specifically what is the value for nutrient enhancement? It was recommended that the nutrient enhancement thresholds be re-evaluated in 2011 as the science on this topic may have changed in recent years.

### 3.5 Habitat Project Implementation: Acquisitions

Objective:	Acquire key properties for protection and restoration
Method:	<ul style="list-style-type: none"> <li>⌚ Actively seek funding for future restoration of lower Ohop Creek</li> <li>⌚ Actively seek funding to acquire multiple properties in the Mashel for protection and future restoration</li> <li>⌚ Actively seek funding to acquire property on mainstem Nisqually River near McKenna for protection</li> <li>⌚ Actively seek funding to acquire property on mainstem Nisqually River at mouth of Tanwax Creek for protection</li> </ul>
2010 Results	Some progress was made to secure funding for Ohop and Mashel properties. These are still in progress. Two properties on the Mashel were acquired in 2010. The property at mouth of Tanwax Creek on the Nisqually was acquired by the Land Trust.
2011 Update	Continue to actively seek funding for acquisition of key properties on Ohop, Mashel, and the Nisqually mainstem.

### 3.6 Habitat Project Implementation: Low-Impact Development

Objective:	Track progress and support reduction of impervious surface in key areas of the Nisqually watershed
Method:	Rain garden in Eatonville existing and new development
2010 Results	A cluster of six rain gardens were constructed along a residential street in Eatonville. Funding was secured for a another cluster of 10 rain gardens to be constructed in 2011.
2011 Update	A cluster of 10 rain gardens will be constructed in Eatonville. A planning grant is also being secured for the town of Eatonville to update its stormwater management plan to convert its system to infiltration as much as possible.

### 3.7 Public Involvement

Objective:	Communicate the importance and value of habitat protection and restoration in the Nisqually watershed and marine areas
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Method:	<ul style="list-style-type: none"> <li>⌚ Training classes</li> <li>⌚ Newsletter</li> <li>⌚ Volunteer action projects</li> <li>⌚ Volunteer monitoring</li> <li>⌚ Presentation to community groups</li> <li>⌚ Work with outreach programs in region</li> </ul>
2010 Results	On-going
2011 Update	No changes to program were proposed

### 3.8 Habitat Project Implementation: Freshwater

Objective:	Continue development of lower Nisqually mainstem restoration plan
Method:	Seek funding for full design work
2010 Results	On-going
2011 Update	<p>Participants at the APR suggested we re-characterize the lower Nisqually (Reach 2a) in EDT to show what we know about that reach. Specifically, the reach is in fact part of the estuary; there is tidal fluctuation and lateral channel movement typical of estuarine habitat. This reach would be part of the estuary and we would revise the upper boundary to a little bit downstream of the railroad crossing (upper extent of tidal influence). Need to evaluate the potential of restoration actions in this reach to Chinook productivity and abundance compared to upstream mainstem reach restoration. The analysis should be updated to include monitoring results that show usage by natural juveniles in this reach.</p> <p>The primary action for 2011 will be to update the EDT analysis to include this upper reach as a separate estuarine reach, reevaluate its restoration benefits, and model a restoration plan developed by NIT Salmon Recovery.</p>

### 3.9 Habitat Project Implementation: Estuary

Objective:	Finalize plan for Red Salmon Slough Phase III restoration for summer 2011 (river dike removal)
Method:	<ul style="list-style-type: none"> <li>⌚ Complete permitting</li> <li>⌚ Complete funding contracting</li> <li>⌚ Complete design</li> </ul>
2010 Results	Finalized engineering design for Phase 3 construction work Applied for all necessary regulatory permits
2011 Update	Obtain all permits Hire contractor and complete restoration construction Start re-vegetation efforts of upland/riparian sites.

### 3.10 Habitat Project Implementation: Estuary

Objective:	Continue riparian plantings in estuary
Method:	Planting native trees and shrubs
2010 Results	On-going
2011 Update	On-going

### 3.11 Habitat Project Implementation: Marine

Objective:	Develop restoration plan for Nisqually River nearshore marine areas
Method:	<ul style="list-style-type: none"> <li>⌚ Work with South Puget Sound Technical Group to refine prioritization tool</li> <li>⌚ Work with other Puget Sound Partnership groups to promote projects that will benefit Nisqually salmon</li> </ul>
2010 Results	A general overview of activities was made at the 2011 APR. Marine habitat projects are coordinated with other lead entities. A focused approach as applied in the freshwater and estuary has not been developed. The group recommended we develop/apply a definitive tool to prioritize actions in South Sound and communicate the importance and prioritization of nearshore restoration to Nisqually Chinook much the way we used EDT to describe the value of estuary restoration.
2011 Update	Revisit our boundary for Puget Sound projects that are tracked. Check what the other lead entities have on their lists already for marine areas and help prioritize these actions. Evaluate potential tools to prioritize lists of nearshore projects with some linkage back to Nisqually Chinook population benefits.

### 3.12 Reporting and Recording

Objective:	Develop habitat data management plan
Method:	<ul style="list-style-type: none"> <li>⌚ Identify data, data types, frequency of data entry, associated metadata across all habitat M&amp;E activities</li> <li>⌚ Identify reporting requirements for all Nisqually Indian Tribe Salmon Recovery related habitat activities (permitting, data sharing, information for terminal area management plan, etc.)</li> <li>⌚ Evaluate need to transition habitat data management to a centralized database system</li> <li>⌚ Organize workgroup meetings to discuss data, ideas and reporting requirements</li> </ul>
2010 Results	On-going
2011 Update	Nisqually NR staff will be working on this plan by cataloging data needs and improving data management in 2011. This includes identifying staff

	needs to implement a plan.
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### 3.13 Monitor and Record Annual Variables and Events Affecting Fall Chinook

Objective:	Formalize process for collecting and archiving information about unplanned events
Method:	Develop database, input previous events and keep up to date
2010 Results	Database was not developed
2011 Update	Develop database with help from Stock Assessment Workgroup

### 3.14 Update Key Assumptions about Habitat Quantity and Quality

Objective:	Update Ecosystem Diagnosis and Treatment (EDT) model inputs
Method:	Measure stream widths in tributaries, use LIDAR to update mainstem gradients
2010 Results	Model was updated with habitat actions implemented prior to summer of 2010. LIDAR and width data was not incorporated in the update.
2011 Update	Update model to extend estuary upstream to upper extent of tidal influence (top of Reach 2a). Review hatchery fish competition in the estuary in light of juvenile monitoring data from estuary. The group noted this is not just a Nisqually hatchery issue, other hatchery fish like those from the Deschutes River are known to use the Nisqually estuary and will compete as well with Nisqually natural Chinook.  Complete update of tributary widths and mainstem gradients.

### 3.15 Habitat Planning

Objective:	Evaluate and update status of elements in <i>Nisqually Watershed Chinook Salmon Three-Year Work Program Update (3-Year Update)</i>
Method:	<ul style="list-style-type: none"> <li>⌚ Prior to APR, review current project and look for updates in status or refinement of descriptions and budgets</li> <li>⌚ Prior to APR, solicit from partners and community new projects to add to plan</li> <li>⌚ At APR, review priorities and sequence scheduling of projects</li> <li>⌚ At APR, review updates with habitat technical committee</li> </ul>
Who:	NIT Salmon Recovery
When:	Prior to and during February 2012 APR
2010 Results	Completed
2011	Update 3 yr plan with elements developed at the APR and new goals and

Update	objectives for Chinook management.
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### 3.16 Implementation: Operations

Objective:	Update and refine operating budget and staffing
Method:	⌚ Develop budget and staffing requirements ⌚ Evaluate previous year budget and staffing
Who:	NIT Salmon Recovery
When:	Prior to February 2012 APR
2010 Results	On-going
2011 Update	Identify needs and update as necessary the 3 yr work plan

## 4 Monitoring and Evaluation Objectives

### 4.1 Natural Adult Spawning Escapement Monitoring

Objective:	Enumerate abundance and composition of natural spawning escapement
Method:	<ul style="list-style-type: none"> <li>⌚ Conduct spawning ground surveys in the usual index reaches (mainstem and Mashel River)</li> <li>⌚ Collect jaw tag data, mark data, and biological data (record sex, lengths, and origin; take scales and otoliths)</li> <li>⌚ Use standard methods to estimate escapement from spawner counts</li> <li>⌚ Compare escapement estimates to weir counts and trap efficiency estimate</li> </ul>
2010 Results	<p>Spawning ground surveys in 2010 used standard methods (survey index reaches and standard expansion formula - <math>(6.81((2.5 * \text{Mainstem Peak}) + \text{Mashel Peak}))</math>).</p> <p>The method to estimate composition (marked and unmarked) was reviewed in 2010 and revised slightly for all years. The revision was a modification to include all marked (ad clipped and/or CWT) when estimating unmarked hatchery-origin in the escapement.</p>
2011 Update	<p>The escapement estimate in 2011 will be based on a mark-recapture estimate. At the APR the group agreed to expand the carcass survey effort to include other areas to get a better mark recovery and evaluate distribution of spawners.</p> <p>A study plan will be developed that includes the minimum number of fish marked at the weir and recovered on the spawning grounds to estimate escapement upstream of the weir.</p>

### 4.2 Adult Natural Spawning Escapement Monitoring: Distribution

Objective:	Estimate spatial distribution and composition (hatchery- and natural-origin) of spawning escapement
Method:	<ul style="list-style-type: none"> <li>⌚ Conduct one survey per location (index and non-index areas) throughout spawning period (peak and post peak spawning periods)</li> <li>⌚ Collect jaw tag data, mark data, and biological data (record sex, lengths, and origin; take scales and otoliths).</li> <li>⌚ Coordinate with salmon watcher volunteers the locations and times of spawning activity for follow-up survey by Nisqually Indian Tribe NR crews</li> </ul>
2010 Results	Standard method was performed in 2010 - index area survey focus.
2011 Update	Implement in 2011 with planned operation of the weir. Escapement abundance upstream of the weir is expected to be lower than previous

	<p>years, which will affect carcass recovery. Spawning survey geographic coverage will be much improved in 2011 to increase coverage and carcass recoveries for the mark-recapture study to estimate weir efficiency.</p> <p>Study design will be developed further to achieve objectives.</p> <p>Spawning areas downstream of the weir will be surveyed for carcass composition and possibly an estimate of escapement downstream of weir.</p>
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### 4.3 Natural Juvenile Production Monitoring

Objective:	Complete annual juvenile outmigration estimates (screw trap at RM 13)
Method:	<ul style="list-style-type: none"> <li>⌚ Record passage at trap for all species by date</li> <li>⌚ Collect biological samples including random samples of fish length (all fish up to 50 fish per day per species)</li> <li>⌚ Estimate trap efficiencies</li> <li>⌚ Expand using trap efficiency to estimate total outmigration</li> </ul>
2010 Results	<p>Total outmigration estimate for 2010 was much lower than 2009.</p> <ul style="list-style-type: none"> <li>⌚ 2009 - 418,086 0 age; 14,321 yearling, total 432,457</li> <li>⌚ 2010 – 130,846 0 age, 14,925 yearling, total 145,771</li> </ul> <p>The lower outmigration abundance in 2010 was consistent with the lower spawner escapement in fall of 2009. 0 age outmigrants per spawner was 123 fish per spawner from the 2008 brood (3,397 spawners) and 150 fish per spawner from the 2009 brood (871 spawners).</p>
2011 Update	<p>Smolt outmigrant trap was operating at the time of the 2011 APR. Beginning in 2012 we will need to collect tissue samples for genetic parentage study developed by NWIFC geneticist.</p>

### 4.4 Population Assessment Tools and Protocols

Objective:	Develop population status and trends protocols
Method:	<ul style="list-style-type: none"> <li>⌚ Collect and synthesize empirical escapement data and juvenile production</li> <li>⌚ Link empirical stock production data to harvest model analyses</li> </ul>
2010 Results	Status and Trends was updated mid-January prior to the 2011 APR, sport catch data was not available at that time
2011 Update	<p>Continue with updates and develop summaries that include data from the weir and the mark recapture study.</p> <p>Develop and implement a sampling strategy to understand natural run recruitment by building a brood table for the natural population. This will require information on terminal run and escapement by age and origin. Specifically scales collected at the weir, hatchery, and fishery with mark/tag status. Age at return for hatchery fish is needed to evaluate the</p>

	<p>assumption that the CWT indicator program is an adequate representative of adult maturity for the natural population.</p> <p>It is impossible to quantify fitness response directly. However, we identified the need to develop a list of benchmarks that describe a fit population so we can assess our status. We will track changes in productivity and abundance, but the problem is assigning this change to fitness versus other changes (e.g., habitat conditions).</p> <p>The 2011 brood will include a genetic parentage study. This will include tissue samples collected from adults collected at the weir in 2011 and tissue samples collected from juveniles collected at the outmigration trap in spring of 2012. The study plan will be developed by NWIFC. This study will estimate weir efficiency (in addition to the estimate from mark-recapture study), and effective number of breeders. The effective number of breeders is the yearly measure of effective population size and will tell us the rate of genetic drift and level of inbreeding. These are important to track during recovery. If effective population size is small the population can be more affected by genetic drift (random fixing of negative traits and loss of positive traits) than by selection. A long-term study could also look at the relative number of progeny (adult – smolt or adult – adult) to track trends in this measure over time, possibly to compare between fish with known parentage composition. This study will not help determine the effect of fish spawning below the weir on upstream genetic composition (due to the unknown rate at which they’d return and try to pass above the weir). If hatchery fish are intentionally passed above the weir this study can also compare reproductive success of HOS and NOS by comparing parentage in the juvenile outmigration.</p>
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#### 4.5 Linking Population Assessment Data to Recovery Objectives

Objective:	Develop methods to use empirical data to challenge key assumptions in the Nisqually Chinook Management Plan
Method:	<ul style="list-style-type: none"> <li>⌚ Review key assumptions in plan</li> <li>⌚ Develop sampling protocols and statistical design for hypothesis testing</li> <li>⌚ Identify data needs</li> </ul>
2010 Results	On-going
2011 Update	<p>Key assumptions that will be tested in 2011 are:</p> <ul style="list-style-type: none"> <li>⌚ Weir efficiency and improved escapement estimate</li> <li>⌚ Others??</li> </ul>

#### 4.6 Habitat Effectiveness Monitoring

Objective:	Finalize monitoring plan for effectiveness of habitat actions
Method:	<ul style="list-style-type: none"> <li>⌚ Identify protocols for monitoring habitat attributes</li> <li>⌚ Coordinate and implement plan with restoration community</li> <li>⌚ Implement plan partially in 2011 (key partners on priority projects), plan for broader implementation in 2012.</li> </ul>
2010 Results	Attribute monitoring tables built, need to communicate with key partners
2011 Update	Need to implement. Meet and coordinate activities with key partners

#### 4.7 Nisqually Adaptive Management Framework

Objective:	Complete Nisqually River Basin adaptive management plan and link with Chinook Stock Management Plan
Method:	<ul style="list-style-type: none"> <li>⌚ Identify linkages to Chinook management plan</li> <li>⌚ Edit adaptive management plan</li> </ul>
2010 Results	On-going
2011 Update	A goal was set to have the Nisqually Chinook Stock Management Plan complete by the end of April.

#### 4.8 Nisqually Estuary Restoration Effectiveness Monitoring

Objective:	Measure and report on progress of estuary habitat recovery and juvenile use of estuary habitat zones
Method:	<ul style="list-style-type: none"> <li>⌚ Measure changes in habitat attributes</li> <li>⌚ Measure relative abundance of juveniles across channels and zones</li> <li>⌚ Collect otolith from juveniles and adults to measure residence time, growth, and life history diversity</li> <li>⌚ Collect Chinook diet data and invertebrate abundance and diversity to evaluate estuarine food production</li> <li>⌚ Continue fish sampling program (seine, fyke, lampara) in estuary habitat zones to monitor distribution, abundance, and diets</li> </ul>
2010 Results	Results were presented at the APR.
2011 Update	Some of the invertebrate and diet work needs funding to continue in 2011. Data will be collected in 2011, money for analysis needs to be identified. No funding for data collection or analysis in 2012. The group commented on the need to connect this work to the 3-yr work plan.

#### 4.9 Data Management

Objective:	Identify data entry, data management, analysis tools required to improve process and establish schedule for their development and testing
Method:	<ul style="list-style-type: none"> <li>⌚ Identify data, data types, frequency of data entry, associated metadata across all M&amp;E activities</li> <li>⌚ Identify reporting requirements for all Nisqually Indian Tribe salmon recovery related activities (permitting, data sharing, information for terminal area management plan, etc)</li> <li>⌚ Evaluate need to transition data management to a centralized database system</li> <li>⌚ Organize workgroup meetings to discuss data, ideas and reporting requirements</li> </ul>
2010 Results	On-going - Status and Trends analysis
2011 Update	The need to manage information is increasing with the weir and change in broodstock management. First step is to identify data needs for internal data management and analysis, and what needs to be shared. What are the similarities and differences? A data work group will be formed to identify data needs.

#### 4.10 Implementation: Monitoring and Evaluation

Objective:	Update and refine operations budget and staffing
Method:	<ul style="list-style-type: none"> <li>⌚ Develop budget and staffing requirements</li> <li>⌚ Evaluate previous year budget and staffing</li> </ul>
2010 Results	On-going
2011 Update	On-going - additional budget and staffing will help

## 5 Policy Issues Affecting Monitoring and Evaluation Implementation and Management

### 5.1 Coordination

Objective:	Coordinate objectives and activities with co-manager
Method:	<ul style="list-style-type: none"> <li>⌚ North of Falcon regional meeting with co-manager</li> <li>⌚ Complete review of Nisqually Chinook Stock Management Plan</li> </ul>
2010 Results	On-going
2011 Update	The goal is to have the management plan ready for distribution by late April. Need to review some final details for projected pre-terminal harvest with WDFW.

### 5.2 Communication

Objective:	Communicate objectives and activities with other interested parties
Method:	<ul style="list-style-type: none"> <li>⌚ Annual presentation North of Falcon tribal caucus</li> <li>⌚ Annual presentation to Nisqually River Council</li> <li>⌚ Annual plan update to NOAA</li> </ul>
2010 Results	On-going
2011 Update	Following the APR the work group needs to develop a way to clearly articulate the current goals of the plan. In the past, the plan simply referred to an escapement number, but that is no longer the case. The group would like to have measurable benchmarks in terms of a range of escapement and a pHOS. Need to translate these targets into numbers of fish.

### 5.3 ESA Recovery Issues

Objective:	Address Endangered Species Act (ESA) issues
Method:	<ul style="list-style-type: none"> <li>⌚ Annual update of 3-Year Update to PSP</li> <li>⌚ Update HGMP</li> <li>⌚ Complete the Hatchery Action Implementation Plan (HAIP) for Nisqually Chinook</li> <li>⌚ Update formal recovery plan (Nisqually chapter)</li> </ul>
2010 Results	On-going
2011 Update	On-going, present the updated 3-yr work plan to the Nisqually River Council by mid-April.

## 5.4 Implementation

Objective:	Ensure agreements with permitting agencies that are consistent with management plan for construction of the weir and operations (weir and hatchery).
Method:	⌚ Communicate in writing plan objectives ⌚ Participate in meetings with NOAA
2010 Results	On-going
2011 Update	On-going

## **Nisqually Salmon Recovery Habitat Restoration and Protection Priorities**

The identification, sequencing, and funding of salmon habitat projects in the Nisqually is being guided by this priority restoration and preservation areas list. These areas, or reaches, were identified by using all available knowledge about habitat conditions and the Ecological Diagnosis and Treatment (EDT) model which combines the interaction of every salmon species with its habitat need and present and past habitat conditions. The model output identifies areas where habitat is important to the species abundance, capacity, and life history diversity. It shows where critical habitat is lost and restoration is needed, therefore a priority for restoration, or where habitat is in near historical or favorable condition and its degradation would highly impact the species and therefore becomes a priority area for protection.

The Nisqually salmon recovery priority areas for 2011 were identified by using known habitat conditions as of the end of 2009. The most significant difference in the current conditions from previous EDT model runs is the changes in the estuary habitat now available after the restoration of over 900 acres of habitat.

For first time in 2010 and again in 2011, the list includes the steelhead EDT model results in combination with the Chinook salmon model results so that both federally listed endangered salmonid species, using both the freshwater and saltwater areas of the Nisqually basin, were used to identify the habitat priority areas. The priority results are still very similar to past years with a few modifications.

Each of the model runs for each species resulted in a list of priority areas based on either a combined percent or a combined rank change in abundance, capacity and life history. The combined percent change was used to be able to combine the two species efficiently, although it skews the list towards areas that are used by both species and weighs more importance on areas that rank high in at least one parameter (abundance, capacity or life history) rather than an area that ranks moderately in all three parameters.

Below is a generalized priority area list. The complete list, individual reach names, rankings and EDT results are attached (Figure 3.) If combined percentages (both species, all three parameters) of the percent change were more than 30%, it was placed into the highest priority tier. If the percent change was less than 30% but more than 12% it was a high priority area. Areas less than 12% and above 3% are designated as medium priority and anything less than 3% is considered a low priority.

### **Tier 1 (Highest Priority)**

Estuary Protection and Restoration

Protection of functioning reaches of the mainstem Nisqually River and the mouth of the river.  
Preservation of the lower Mashel River.

### **Tier 2 (High Priority)**

Protection of the rest of the mainstem Nisqually River reaches, except upper Nisqually.  
Improving upstream fish passage at Centralia Diversion Dam  
Restoration of the lowest reach of the Nisqually River reaches near Mounts Road  
Restoration of lower Ohop Creek valley  
Protection and restoration of the rest of mainstem Mashel River  
Restoration of South Puget Sound  
Preservation of lower Yelm Creek

### **Tier 3 (Medium Priority)**

**Protection**

Protection and restoration of Busywild Creek  
Protection of Upper Nisqually River from Alder/LaGrande dams to mouth of Ohop Creek

Restoration of McKenna and Whitewater Reaches of Nisqually River  
Protection of lower and middle Tanwax Creek and restoration of upper Tanwax  
Protection and restoration of Muck Creek downstream of Roy and South Fork Muck  
Restoration of Muck Creek upstream of Roy  
Restoration of Nisqually and Commencement Bays and Central Puget Sound and Eastern Straits  
Protection of entire Ohop Creek Basin  
Protection of Little Mashel  
Protection of lower sections of Toboton and Powell Creek,

#### **Tier 4 (Low Priority)**

Protection and restoration of all other areas that are identified to contribute to the recovery of endangered Nisqually salmonids. See map for details.

#### **Tier 5 (no priority)**

Restoration and protection of the remaining stream reaches in the watershed

### **2011 Work plan high priority projects**

The 2011 3-year workplan includes 98 habitat restoration and protection projects to recover endangered Nisqually salmon. Not all projects that fall within high priority areas are high priority projects. They also need to follow the guiding principles of Nisqually salmon recovery:

#### 1. Addressing **priority** habitat features, watershed processes and sufficient scale

Projects need to address the priority limiting habitat features or processes identified by EDT analysis or other assessments. The project also needs to be at a sufficient scale or blocked with other similar projects to have a detectable impact over time. If the project is an assessment, it should identify data gaps, identify on-the-ground projects and further refine the strategy of addressing the priority features and process.

#### 2. Watershed **process** restoration rather than habitat form manipulation

Restoration and protection projects should address habitat-forming process rather than the single manipulation of form or function that is not sustainable in the long-term. A complex system transfers watershed inputs and form to habitat functions, and projects could occur at any point in that spectrum. In general projects that address the inputs and pure processes will have higher priority. It is recognized that in today's populated environment, land use and human desires are sometime incompatible with full process restoration and therefore compromises will have to be made.

#### 3. Project should be proposed in logical **sequence**

Projects should be implemented in logical and correct sequence. Projects are sometimes built upon previous projects or connected to related activities and timetables and therefore its timing should be carefully considered. In general, projects in higher priority areas should be implemented first, although circumstance or better cost/benefit ratios can elevate projects in lower priority areas. Protection projects that build upon others and therefore protect a larger block of land are also given higher priority.

#### 4. Project need to be supported by the **public** and community

Salmon recovery projects will not achieve their goal completely if they are not supported by the community. All the projects are dependent on local landowner willingness. If projects are opposed by the public, permits and funding can be more difficult to obtain or even become unavailable to the proponent. More importantly, if the community perceives a project as wasteful, misdirected, or even harmful the support for salmon recovery in the watershed could diminish. Projects that are

guided by local citizens could be used as showcases to educate, and generally help build support for salmon recovery and the community are encouraged and are higher priority.

These projects are located in high priority areas and follow the guiding principles:

## Tier 1: Highest Priority Projects

### Estuary Protection and Restoration

Protection and restoration of the estuary is still the highest priority for Nisqually Salmon recovery. Even with the **Nisqually Refuge Estuary Restoration** of over 760 acres and the Nisqually Tribe's **Red Salmon Slough (RSS)** restoration work, restoration of the rest of the historical estuary is still ranked above any restoration areas by the model. Both those projects are still in progress and the **Estuary Restoration Monitoring** of the projects is critical to our ability to evaluate the effectiveness of this work. One monitoring result, so far, has shown the low connectivity of the entire Red Salmon Slough area to the Nisqually Reach and river due to some remnant dikes. The **RSS Phase 3 Project** will remove those remnant dikes and increase the water, sediment and biota exchange between those areas. The areas that are left that included historical estuary but now are converted are mostly in the historical forested salt/freshwater transitional areas on the upstream side of Interstate 5. Restoring those historical areas would be a major undertaking that could involve reclaiming developed areas and removing or opening up the Interstate 5 fill which acts as a large cross valley dike. The impacts, benefits and feasibility of such a project would be investigated through the **I-5 Fill removal feasibility analysis** which is proposed within the next 3 years.

Protection of the estuary is now more important than ever, since several hundred acres are now accessible to juvenile salmonids. Fortunately most of the areas are in protected ownership, i.e. Nisqually Wildlife Refuge and Nisqually Indian Tribe's Braget Marsh. Some smaller areas are not, and the **Lower Nisqually Mainstem/McAllister ck. Acquisition project** is focused on securing those last remaining intact areas in the estuary and lower Nisqually mainstem, but also securing degraded areas to make them available for restoration.

Restoration of the lowest mainstem Nisqually River section where human encroachment and development with the river valley has taken place is a high priority. This section of the river because it is tidally influenced and is a key area for fish as they begin the transition to saltwater has been reclassified as the estuary as part of this year's workplan update process. This small section is the transitional area from freshwater to estuary and is almost through its entire section tidally influenced. Restoration projects on this tributary fan are being assessed and identified through the **Lower Nisqually Restoration Feasibility and Design Project**. Two projects that have resulted out of the assessment so far and are actively being worked on are the **Lower Nisqually Side-channel Project** which artificially re-creates a side-channel channel network in this historic delta fan and the **Riverbend Logjam Project**, which increases the instream habitat complexity and prevents further hardening of banks in this reach.

#### 2011 Estuary Protection and Restoration Projects:

Nisqually Refuge Estuary Restoration 760 acre	-in progress, near completion
Red Salmon Slough Restoration Phase 3	-planned for 2011
I-5 Fill removal feasibility analysis	-conceptual
Estuary Restoration Monitoring	-in progress
Lower Nisqually Mainstem/McAllister Ck. Acquisition	-conceptual
Lower Nisqually Side-channel Project	-feasibility completed
Riverbend Logjam project	-feasibility completed

**Protection of functioning reaches of the mainstem Nisqually River, and the mouth of the river.**

Protection of the all functioning reaches of mainstem Nisqually River is the highest priority freshwater project. This includes the entire lower river from the mouth to McKenna, lower Wilcox Reach, and large sections of the Middle Reach. It recognizes the fact that the two lower reaches present 18.5 contiguous river and riparian miles and over 3000 acres of floodplain in near historic conditions. It includes some of the most heavily used spawning areas for both Chinook and steelhead, but also by chum and pink salmon. Due to its location in the lower watershed, it is the largest mainstem river section and the majority of salmon have to traverse through this section at least twice in their lifetime, as juveniles leaving the basin and adults returning to the spawning grounds. Large sections of the entire river valley are in protected ownership, mostly Joint Base Lewis-McChord and Nisqually Indian Reservation, and development in those areas is very limited. The upper end of the Whitewater Reach, near McKenna is privately owned on both sides of the river and is in various degrees of degradation.

The Wilcox and Middle reaches together, includes 11.1 river miles from the Centralia Diversion Dam to the mouth of Ohop Creek at Rivermile (RM) 37.3. A majority of the steelhead and a large part of the Chinook population still traverses and utilize these reaches as adults and juveniles. Due to the existing protection of most of the Lower and Whitewater reaches, most active acquisition for protection projects occur in those areas. Smaller in-holdings in all reaches are being protected through outright acquisition for protection through the on-going Nisqually Land Trust's and Pierce County's **Mainstem Protection Project**. The lowest area of the Reservation reach is unprotected along its Thurston County shoreline, and purchases of intact land in this area, would also be made by the Refuge through the **Lower Nisqually Mainstem/McAllister Ck. Acquisition** project. The **Shanzenbach Protection Project** is the first identified purchase of a specific undeveloped riverside property in this area. Upstream, larger pieces of unprotected land will still be addressed individually through projects such as the **Yelm Shoreline Protection Project** which would purchase forested land along the Whitewater reach of the river and therefore protect 0.4 miles of intact and critical shoreline. The **Malm Shoreline Protection Project** plans to purchase and protect a small parcel of undeveloped land along the Whitewater Reach to add the the neighboring Land Trust holdings. The **Wilcox Area Protection Project** which targets protecting 250 acres of floodplain and riparian habitat through conservation easements on an active agricultural farm.

2011 Mainstem (Lower, Whitewater 3-2, 3-3, Wilcox Reach 5-1, and Middle Reach 6-2 and 6-3) Protection Projects:

Mainstem Protection Project	-ongoing
Yelm Shoreline Protection	-feasibility completed
Lower Nisqually Mainstem/McAllister Ck. Acquisition	-conceptual
Wilcox Area Protection Project	-conceptual
Shanzenbach Protection	-conceptual
Malm Shoreline Protection	-conceptual

**Protection of Lower Mashel River**

The lower 3.2 miles are in protected status and owned by the University of Washington's Pack Forest along the south side and WA State Parks and Nisqually Land Trust on the north side. Further acquisition projects are not warranted at this time, although permanent protection of all habitat features are not guaranteed and should be monitored.

**Tier 2: High priority**

**Protection of rest of the mainstem Nisqually**

Although the McKenna Reach, Upper Reach and the rest of the Wilcox and Middle reaches of the Nisqually are not in as pristine condition as the lowest two mainstem reaches, they still include vast stretches of intact habitat and still provide migration, spawning and rearing habitat for a large

proportion of the Nisqually salmon population. Most of the privately-owned streamside properties are located in these reaches, and therefore a lot of effort has been and still is being put into protecting the functioning habitat areas of these reaches. The **Mainstem Protection Project** is focusing on small parcels that have valuable habitat, that come up for sale unexpectedly and therefore cannot be identified specifically and can be applied in these reaches as well as all other mainstem reaches. The **Haight** and the **Healy** protection project are planning on protecting two properties that were identified specifically in the Wilcox reach, the first is a planning on purchasing a small parcel on the Thurston shoreline downstream of Tanwax Creek, and the latter a project to protect a large undeveloped floodplain parcel on the Pierce County side of the river. The confluence itself is slated for protection with the help of the **Tanwax/Nisqually Confluence Protection Project**. The **Brighton Creek Property Protection project** is planning on protecting the mainstem Nisqually, at and including the mouth of Brighton Creek and a part of the extensive wetlands along the lower Brighton Creek, which are important off-channel habitat areas that are generally lacking in this reach. Similarly, the **Nisqually/Powell Protection Phase 2** will protect part the vast off-channel habitat area near the mouth of Powell Creek. The **Wilcox Area Protection and the McKenna Area Protection Projects** are planning on protecting 250 acres of floodplain habitat in each reach through conservation easements on active agricultural farms. These easements will protect existing valuable habitat, but also make them available for restoration, another high priority action.

2011 Mainstem (McKenna, Wilcox, Middle and Upper) Protection Projects:

Mainstem Protection Project	-on-going
Wilcox Area Protection Project	-conceptual
McKenna Area Protection Project	-conceptual
Haight Shoreline Protection	-conceptual
Healy Shoreline Protection	-conceptual
Tanwax/Nisqually Confluence Protection Project	-conceptual
Brighton Creek Property Protection	-conceptual
Nisqually/Powell Protection Phase 2	-conceptual

**Improve fish passage at Centralia Diversion Dam**

Fish passage rates are the only input for the EDT model for any dams and culverts in the watershed, not other habitat attributes are being used for the evaluation of these “point” reaches. The Centralia Diversion Dam includes an upstream fish ladder for adults and a juvenile exclusion device for the diversion canal. There is no good data currently on fish passage at the Diversion Dam. The EDT model uses as inputs for this point reach rough estimates by local biologists. If those estimates are correct then the fish passage at the Dam is a major impediment to species recovery. However, because there is no good data a major study, the **Centralia Diversion Dam passage study**, is being proposed to look at the upstream passage rates and refine the model inputs. This study is necessary before we can determine how much of an issue fish passage at the dam is for recovery.

**Protection and restoration of Lower and Middle Mashel River**

Restoration of the mainstem Mashel River between the mouth to its confluence with Busywild Creek (RM 14.6) and protection from Hwy 7 Bridge (RM 3.2) to Busywild Creek is also of high priority because of many intact reaches of the river and its importance to Chinook life history diversity and steelhead production.

Restoration of the Mashel River has focused on the Eatonville reach over the years, and different phases of the **Mashel Eatonville Restoration Project** have been completed, are in progress, or are in design stage. The focus has been on restoring floodplain connections, in-stream habitat and riparian forests through the removal of bank hardening, side-channel re-activation, log jam installation and riparian tree plantings. The **Mashel Eatonville Shoreline Riparian** and the

**Middle Mashel Riparian Enhancement Projects** are focusing on already protected areas that need riparian forest improvement and invasive species control. The **Mashel River Flow Enhancement Investigation** tries to address the summer low flow problem in the river by investigating flow augmentation projects.

The Eatonville section of the Mashel River, where the river flows through the town of Eatonville is least protected. Protection of valuable land for conservation, but also to make them available for restoration in the Eatonville section is being undertaken by the **Mashel Eatonville Reach Protection Initiative** and the **Mashel Riparian Habitat Acquisition** project. In the upper half of the watershed the river flows through industrial forestlands in the Cascade foothills. Long-term protection of the river corridor through the commercial forest land is proposed via the **Mashel Middle Reach Protection** and the **Upper Mashel Community Forest Initiative**. The first project is an outright purchase of roughly 200 acres along Middle Mashel R-1. The second proposes to establish a forest tract that has the multiple purposes of producing forest products, protecting fish, wildlife and water, and supporting the community. The **Upper Watershed Small Property Protection Project** is an on-going initiative to protect small properties in the Mashel and Ohop watershed as soon as they become available and block them with larger protected lands. The protection of the habitat in commercial forestlands is also being addressed through the **Forest and Fish Prescription Technical Assistance** which monitors commercial timber practices

### Restoration and Protection of the rest of the Mashel River mainstem

#### 2011 Mashel River Restoration Projects

Mashel Eatonville Restoration Phase 2	-in progress
Mashel Eatonville Restoration Phase 3	- design completed
Mashel Monitoring Project	-on going
Mashel Eatonville Shoreline Riparian Enhancement	-conceptual
Middle Mashel Riparian Enhancement	-conceptual

#### 2011 Mashel Protection Projects:

Mashel Eatonville Reach Protection Initiative	-in progress
Mashel Riparian Habitat Acquisition	-in progress
Forest and Fish Prescription Technical Assistance	-on-going
Mashel Middle Reach Protection	-design completed
Upper Mashel Community Forest Initiative	-conceptual
Upper Watershed Small Property Protection	-on-going

### Restore lower Ohop valley

The low gradient lower Ohop creek has been severely altered over the last 100 years to drain the farmlands in the valley. The **Lower Ohop Valley Restoration Project Phase 1, 2 and 3** will re-elevate the 4.4 miles of severely channelized creek back into its original floodplain recreating a 6 mile long stream with its original meander pattern and restoring its hydrologic connection to the adjacent floodplain and wetland areas. Off-channel habitat will be created and the riparian areas will be planted with native vegetation. The project will also revegetate 400 acres of the surrounding valley floor which is dominated by wetlands. This project has been split into three phases to spread out the need for securing funding. This project will benefit Chinook and steelhead trout by providing over-wintering areas outside the mainstem Nisqually and a refuge basin to preserve life history diversity in case of catastrophic events in the mainstem.

#### 2010 Lower Ohop 1a restoration projects:

Lower Ohop valley Restoration Project Phase 1	- in progress
Lower Ohop valley Restoration Project Phase 2	-in design process
Lower Ohop valley Restoration Project Phase 3	-feasibility completed

## Restoration of Puget Sound Shorelines

Projects that are located within South Puget Sound i.e. downstream of Tacoma Narrows and east of Johnson Point, are identified in the Nisqually 3-year workplan, even though the location of the projects falls in adjacent watersheds' 3 year workplan, because the projects are significant to migrating Nisqually salmon. The EDT analysis identified South Sound, Central Sound, and the Nisqually and Commencement Bays as high priority areas for restoration. Due to extensive development activities over the last century on many of the Puget Sound shorelines, many key nearshore processes have been significantly degraded or lost. Impairments to habitat forming processes on the shoreline include: reduced sediment input and transport, loss of riparian fringe habitat, reduced estuarine area and connectivity, filling over of upper intertidal beaches and degradation of water quality due to introduction of contaminants. There are several discrete areas along these shorelines where such habitat and process impairments might be addressed through restoration or enhancement. Conversely, there are a few discrete areas, where habitat features still exist to support salmonids; these areas should be protected. The **Nisqually to Pt. Defiance Nearshore Assessment Project** identifies those restoration and protection projects such as the **Ketron Island Protection Project** which would protect some of the last intact shoreline between the Nisqually and Point Defiance. Most projects in the plan address one or more of the lost nearshore processes. The **Titlow Estuary Restoration**, and the **Sequalitchew Estuarine Restoration Design** address lost small estuaries along the shorelines. The **East Oro Bay Restoration** project also addresses lost pocket estuary habitat, but is located on Anderson Island in South Puget Sound. The **Chambers Bay Estuarine and Riparian Enhancement** project addresses both, the estuarine and riparian processes within Chambers Bay. Sediment transport and beach habitat are addressed in the: **Chambers Beach Reconstruction and Riparian Enhancement, East Nisqually Reach Beach Nourishment Pilot, Filucy Bay Bulkhead Removal, VonGeldern Cove Bulkhead Removal, and Penrose Point Bulkhead Removal** Projects. The **Nisqually to Pt. Defiance Nearshore Restoration Project** is a placeholder for a substantial project to address the effects of the railroad on the shoreline.

### 2010 South Sound nearshore restoration projects:

Nisqually to Pt. Defiance Nearshore Assessment Project	- completed
Ketron Island Protection Project	-conceptual
Titlow Estuary Restoration	-design in progress
Sequalitchew Estuarine Restoration Design	-feasibility completed
East Oro Bay Restoration	-conceptual
Chambers Bay Estuarine and Riparian Enhancement	-feasibility completed
Chambers Beach Reconstruction and Riparian Enh.	-feasibility completed
East Nisqually Reach Beach Nourishment Pilot	-feasibility completed
Filucy Bay Bulkhead Removal	-feasibility in progress
VonGeldern Cove Bulkhead Removal	-feasibility in progress
Penrose Point Bulkhead Removal	-feasibility in progress
Nisqually to Pt. Defiance Nearshore Restoration Project	-feasibility completed

**Medium and low priority projects can be found in the 3-year workplan spreadsheet and identified by the priority tier number.**

Newly added projects (YELLOW)  
 Active projects (funded) (GREEN)  
 Completed projects (BLUE)  
 New information/updates to existing projects (Orange)

Estuary Restoration & Protection

Major Strategy (Level 1-subbasin)	Initiative (Level 2)	Project (Level 3)	ID#	Project Status	Project Type	Plan Category	Project Name	Project Description	Priority Area	Principles modifier	Comments on modifier	Priority tier of project	Limiting Factors	Reference Document for limiting factor	
Nisqually Wildlife Refuge Restoration & Protection	NWR Estuary restoration 760 acres	NWR Estuary restoration 760 acres	11-ESTUARY-1001	Active	Restoration Projects	Capital	Nisqually Refuge Estuary Restoration 760 acres	This is the single most important habitat project in the Nisqually salmon recovery plan. 4.5 miles of the outer dike was removed in the summer of 2009 allowing the natural regeneration of estuary habitat and reconnection of over 21 miles of historic tidal channel on 762 acres. This project combined with the restoration on the Tribe's estuary lands will result in, and is the primary opportunity for, significant increases in the productivity and capacity of Nisqually Chinook. All the necessary funding has been identified for the project. An additional element of the project - Develop and implement a riparian restoration project for the riparian area at the Refuge to include planting a variety of native riparian trees and shrub species and restoring natural hydrology on 25 acres of formerly diked habitat on the Refuge that is subject to tidal influence (large plain) near the mouth of the Nisqually River.	1			1	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Non-Habitat Limiting Factors, Degraded Habitat-Stream Flow, Degraded Habitat-Estuarine and Nearshore Marine	Nisqually Chinook Recovery Plan, Salmon and Steelhead Limiting Factors WRIA 11, Nisqually NWR Final Comprehensive Conservation Plan, EDT analysis	
		Invasive species management at NWR	11-ESTUARY-1003	Inactive	Restoration Projects	Non-capital	Invasive Species Management at NWR (obj. 1.4)	Develop and implement an invasive species monitoring and integrated pest management control program for the Nisqually National Wildlife Refuge using both manual and chemical treatment methods. This would require hiring a 0.5 FTE Fish and Wildlife Biologist, GS-7/9 (\$27,900 starting annual cost), to conduct the monitoring program and guide treatment efforts as well as some time for a 0.5 FTE Biological Technician, GS-5/6/7 (\$22,500 starting annual cost), to assist in monitoring the establishment of invasive species and implementing control measures as necessary.	1	2	Does not address limiting factor and minor problem for salmon	3	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	Nisqually NWR Final Comprehensive Conservation Plan	
	Red Salmon Slough Restoration	RSS Restoration - Phase 3	Red Salmon Slough Estuary Restoration Phase 3	11-ESTUARY-1002	Active	Restoration Projects	Capital	Red Salmon Slough Estuary Restoration Phase 3	Removal of last remaining dike on Nisqually Tribes estuary property, old bridge pilings in Red Salmon Slough and restore riparian habitat on the remaining non-saltmarsh areas. The dike is a raised dike for an old road and is not fully impeding salt water access, but is a partial obstruction and causes a delay in tidal inundation.	1			1	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Non-Habitat Limiting Factors, Degraded Habitat-Stream Flow, Degraded Habitat-Estuarine and Nearshore Marine	Nisqually Chinook Recovery Plan
			Lower Nisq/McAllister Cr. Acquisition	11-MAINSTEM-1006	Inactive	Acquisition for Restoration	Capital	Lower Nisqually Mainstem, McAllister Creek Acquisition	Objective in Nisqually National Wildlife Refuge Comprehensive Conservation Plan. Addition of these acres to the Refuge would make them available for restoration. Cost estimate is very preliminary.	1			1	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Flow, Degraded Habitat-Estuarine and Nearshore Marine	Nisqually Chinook Recovery Plan, Salmon and Steelhead Limiting Factors WRIA 11, Nisqually NWR Final Comprehensive Conservation Plan
	Lower Nisqually Restoration & Protection	I-5 feasibility	I-5 feasibility	11-ESTUARY-1004	Inactive	Future Habitat Project Development	Non-capital	I-5 Fill Removal Feasibility Analysis	It has been identified in the watershed habitat analysis that Interstate 5 where it crosses the Nisqually Estuary is itself a serious impediment to the formation of natural tidally influenced habitat. Replacement of the current fill under the road with a pier or bridge structure could result in significant improvements to salmon habitat in the Lower Nisqually and McAllister Creek. This assessment would begin to explore that possibility and determine if a potential project might be developed.	1			1	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Non-Habitat Limiting Factors, Degraded Habitat-Stream Flow, Degraded Habitat-Estuarine and Nearshore Marine	Nisqually Chinook Recovery Plan
			Lower Nisq Side-channel project	11-MAINSTEM-1024	Inactive	Restoration Projects	Capital	Lower Nisqually Side-channel project	Construction of 2 side channels totalling over 4000 feet in length that would start Mounts rd. bridge and re-enter the mainstem above the I-5 bridge. These channels would re-activate the floodplain which is cut-off to active river migration and side-channel formation.	1			1	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment	Nisqually Chinook Recovery Plan, Lower Nisqually Feasibility Plan (NIT, 2008)
			Riverbend Log jam project	11-MAINSTEM-1025	Inactive	Restoration Projects	Capital	Riverbend Logjam Project	The Nisqually River mainstem approaches the BNSF railroad prism at an angle of approximately 90 degrees, flows north along the embankment, then turns sharply left to cross under the railroad bridge. This alignment is the result of arrested meander migration. The railroad prism has been armored within the vicinity of the river, and this armored bank provides little habitat value or refuge for migrating fish, and is not effective at directing flow away from the apex of the bend. To stabilize the outside of the bend and at the same time provide migrating fish with a boundary refuge from the main force of the river, we propose that up to 9 large log jams be built into the bank and along the margins of the mainstem.	1			1	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment	Nisqually Chinook Recovery Plan, Lower Nisqually Feasibility Plan (NIT, 2008)
			Shanzenbach Property Protection	11-MAINSTEM-1028	New-2011	Acquisition for Protection		Shanzenbach Property Protection	Acquire 2 acres of Nisqually shoreline on west side of river just upstream of I-5 bridge.	1			1	Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Estuarine and Nearshore Marine	
	'Independent Projects'	Estuary Restoration Monitoring Project	Estuary Restoration Monitoring Project	11-ESTUARY-1006	Active	Habitat Project Monitoring	Non-Capital	Estuary Restoration Project Monitoring	Pre and post monitoring of the estuary restoration project area to determine the extent of estuarine habitat development and document fish and wildlife response in the estuarine restoration area and associated nearshore. Monitoring will include: fish use and prey analysis, vegetation response/development, water quality, salinity, channel development, sediment dynamics/modeling, invertebrate colonization, changes in marsh elevation, tidal inundation, bird use and energetics, climate change/sea level impacts, and effects on the nearshore including eelgrass beds.	1		1	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Non-Habitat Limiting Factors, Degraded Habitat-Stream Flow, Degraded Habitat-Estuarine and Nearshore Marine	Nisqually Chinook Recovery Plan, Nisqually Refuge - CCP	
	Wilcox Farm Floodplain Restoration		11-MAINSTEM-1001	Active	Restoration Projects	Capital	Wilcox farm Floodplain Restoration	Recreate historic floodplain and channel migration zone between the Nisqually mainstem and Harts Lake Creek. This area currently is diked and owned and managed by Wilcox Farms. This would be a combination of land acquisition and restoration of 190 acres of former floodplain.	3	-1	Large scale restoration addressing most limiting factors in entire reach	2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	SPSSEG off-channel report	
Wilcox Reach Restoration & Protection	Wilcox Flats restoration	Wilcox Flats restoration	11-MAINSTEM-1003	Active	Restoration Projects	Capital	Wilcox Flats Nisqually Mainstem and Off-Channel Restoration	This project is restoring riparian forest and off-channel habitat on 155+ acres of Nisqually Land Trust property in the active channel migration zone of the Nisqually Wilcox Reach (between river mile 28 and 29.5).	4	-1	Process restoration	3	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Water Quality, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	2001 Nisqually Chinook Recovery Plan	
		Wilcox area protection project	11-MAINSTEM-1008	Inactive	Acquisition for Protection	Capital	Wilcox Area Protection Project	Acquire easement over 250 acres of channel, floodplain and riparian forest along the Nisqually mainstem and Horn Creek in the Wilcox Farm area. Acquisition of a conservation easement over a large property near the most rapidly urbanizing area along the mainstem of the river.	1			1	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan	
		Haight Shoreline Protection	11-MAINSTEM-1031	New-2011	Acquisition for Protection		Haight Shoreline Protection	Acquire 20 acres of Nisqually shoreline along the south bank just downstream of the confluence of the Nisqually and Tanwax Creek.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment		
		Healy Shoreline Protection	11-MAINSTEM-1032	New-2011	Acquisition for Protection		Healy Shoreline Protection	Acquire up to 160 acres of Nisqually River shoreline on the north bank of the upstream end of the Wilcox Reach.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality		
'Independent Projects'	Generic Mainstem Protection	Generic Mainstem Protection	11-MAINSTEM-1007	Active	Acquisition for Protection	Capital	Mainstem Protection Project	Acquire 50 acres, 0.5 mile of Nisqually Mainstem per year. Projects would focus on areas with intact riparian function, channel migration zone and seek to block with other parcels already in protected status.	1			1	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan	
		Centralia Diversion Passage Study	11-MAINSTEM-1026	Inactive	Future Habitat Project Development	Non-Capital	Centralia Diversion Dam passage study	The passage rates are the only input values in the EDT model used to evaluate dams and culverts, no other affects are being used for the evaluation of those "point" reaches. The Centralia Diversion dam includes an upstream fish ladder for adults and a juvenile exclusion device for the diversion canal. Downstream passage appears to be no problem, but the adult and juvenile upstream migration rate could be a major impediment to species recovery. The rates used at this point is based on professional estimates, with no empirical data to back the assumptions, and result in a significant limiting factor for all salmon populations in the Nisqually.	2			2		NCRP	

toration & Protection

Major Strategy (Level 1-subbasin)	Initiative (Level 2)	Project (Level 3)	ID#	Project Status	Project Type	Plan Category	Project Name	Project Description	Priority Area	Principles modifier	Comments on modifier	Priority tier of project	Limiting Factors	Reference Document for limiting factor
toration & Protection	Mainstem Nisqually Riparian Enhancement	Mainstem Nisqually Riparian Enhancement	11-MAINSTEM-1027	New-2011	Restoration Projects	Capital	Mainstem Nisqually Riparian Enhancement	This project proposes to restore degraded portions of the riparian zone along the Nisqually River by revegetating the valley floor with native trees and shrubs. Activities include: identification of willing landowners, individual site assessments, development of restoration plans, control of invasive species and valley floor revegetation. Cleared areas will be replanted. Secondary deciduous floodplain forests will be underplanted with native conifer species to provide a sustainable source of LWD. Restoration planning will include additional recommendations for habitat enhancement. This project will include volunteer planting events to further involve the surrounding community. Landowners will be trained on planting maintenance and will assist with maintenance activities such as weed control and plant protection tube removal.	2			2	Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	Nisqually Chinook Recovery Plan
		Yelm - Lower Reach Restoration	11-MAINSTEM-1014	Active	Restoration Projects	Capital	Yelm - Lower Reach Restoration	Restoration of riparian and upland forest on 30+ acres of Nisqually Land Trust property adjacent to the Nisqually mainstem, just downstream of the confluence of Thompson Creek and the Nisqually mainstem. Removal of invasive species and debris; and planting of native trees and shrubs in forest openings and understory.	4			4	Degraded Habitat-Riparian Areas and LWD Recruitment	2001 Nisqually Chinook Recovery Plan
	Yelm/McKenna Shoreline Projects	North Yelm Riparian Restoration	11-MAINSTEM-1015	Inactive	Restoration Projects	Capital	North Yelm Riparian Restoration	This project would enhance and restore river bank, riparian and upland forest and shrub habitats on two Nisqually Land Trust properties in North Yelm. Together the properties are approximately 42 acres. They are directly across the river from one another and contain a 200-ft wide power easement which has received heavy public use. Restoration activities would include: installing fences and gates where needed, rehabilitating areas impacted by public access, removal of invasive species and planting native trees and shrubs.	4	-1	EDT problem	3	Degraded Habitat-Riparian Areas and LWD Recruitment	2001 Nisqually Chinook Recovery Plan
		Yelm-McKenna Riparian Restoration	11-MAINSTEM-1016	Active	Restoration Projects	Capital	Yelm-McKenna Riparian Restoration	Restoration of riparian habitat along the Nisqually mainstem, McKenna Creek, and a large off-channel wetland on 110+ acres of Nisqually Land Trust property in Yelm. Ongoing activities include: control of invasive species along McKenna Creek in the vicinity of the Elledge culvert; removal of non-native landscaping plants and invasive species throughout the property; and initial planting of native trees and shrubs in old horse camp area. Additional activities to be completed as funding is available: control of invasive species along the full length of McKenna Creek and throughout property; additional plantings of native trees and shrubs in open areas; and improvement of wetland connectivity.	4	-1	EDT problem, highly visible, high community support	3	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment	2001 Nisqually Chinook Recovery Plan
		Yelm Shoreline protection	11-MAINSTEM-1022	Active	Acquisition Projects	Capital	Yelm Shoreline Protection	This project proposes to acquire three properties totaling 45 acres and 0.4 miles of mainstem Nisqually River shoreline near Yelm/McKenna, the most rapidly urbanizing area along the mainstem. These properties are in a reach of the river rated highest priority for protection in the Nisqually Chinook Recovery Plan. They directly adjoin the Nisqually Land Trust's 168-acre Yelm Shoreline Management Unit which includes 1.5 miles of permanently protected shoreline. They contain approximately 25 acres of mature riparian forest and 10 acres of Class I wetlands. They also contain rare Gary oak habitat. The properties suffer are in need of clean up, restoration and protection against trespass. 2010: Acquisition of the 1st of the three parcels was completed.	1			1	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	2001 Nisqually Chinook Recovery Plan
		McKenna 94th Ave Riparian Restoration	11-MAINSTEM-1017	Inactive	Restoration Projects	Capital	McKenna 94th Ave Riparian Restoration	Remove invasive species and plant native trees and shrubs on 1.5 acres adjacent to Nisqually mainstem in McKenna.	3	0		3	Degraded Habitat-Riparian Areas and LWD Recruitment	2001 Nisqually Chinook Recovery Plan
		Yelm Shoreline Access project	11-MAINSTEM-1004	Inactive	Habitat Protection	Non-Capital	Yelm Shoreline Access Project	Evaluate Nisqually Land Trust shoreline properties along the Nisqually mainstem in Yelm for low-impact, day-use public access opportunities. Where appropriate, plan and develop trails or other public access opportunities in cooperation with local agencies and organizations. This project will include outreach and education to the local community about Nisqually River habitats and species.	1	2	Does not address limiting factor and minor problem for salmon	3	Degraded Habitat-Riparian Areas and LWD Recruitment, Non-Habitat Limiting Factors	2001 Nisqually Chinook Recovery Plan
		McKenna Protection Project	11-MAINSTEM-1009	Active	Acquisition for Protection	Capital	McKenna Area Protection Project	Protect over 250 acres along the Nisqually River that includes portions of McKenna Creek headwater wetlands, riparian areas along the mainstem. The sponsors will acquire a conservation easement over this property situated near the most rapidly urbanizing area along the mainstem of the Nisqually River.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan
		Malm Shoreline Protection	11-MAINSTEM-1029	New-2011	Acquisition for Protection		Malm Shoreline Protection	Acquire 12 acres of Nisqually River shoreline in the Whitewater Reach. This property is on the east side of the river, just downstream of 20 acres and across the river from 25 acres already protected by the Land Trust.	1			1	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	
		Brighton Cr Property Protection	11-MAINSTEM-1030	New-2011	Acquisition for Protection		Brighton Cr Property Protection	Protection of 20+ acres of riparian and upland forest along the lower reach of Brighton Creek through a conservation easement.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	
		Mainstem Monitoring and Assessments	Mainstem Nisqually LWD assessment and restoration plan	11-MAINSTEM-1012	Inactive	Future Habitat Project Development	Non-capital	Mainstem Nisqually LWD Assessment and Restoration Plan	In the Watershed analysis and in other assessments of the mainstem Nisqually it has been noted that certain sections of the Nisqually mainstem is lacking wood, especially in the reaches immediately downstream of the Alder/La Grande Hydro Project. This project will assess the large woody debris loading in the many of these reaches and identifies wood loading deficiencies, combines them with the data on wood recruitment and identifies wood project for the mainstem including 20% engineering design.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Stream Substrate
	Off-channel project		11-MAINSTEM-1011	Inactive	Future Habitat Project Development	Non-capital	Nisqually Mainstem Off-Channel Restoration Project Development-Feasibility	An off-channel habitat assessment completed by SPSSEG and the Tribe in 2004 evaluated the presence and condition of off-channel habitat throughout the Nisqually mainstem. The report identified high priority sites for restoration of off-channel habitat. However, the highest priority projects have not yet been implemented due in large part to a lack of landowner willingness. There is a need to do additional landowner outreach, identify new willing landowners and then assess feasibility an design key projects.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Flow, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	NCRP
	Middle Nisqually	Thurston Ridge Riparian Restoration	11-MAINSTEM-1019	Inactive	Restoration Projects	Capital	Thurston Ridge Riparian Restoration	The Nisqually Land Trust owns 65+ acres of riparian forest habitat on the Thurston side of the Nisqually mainstem. This area is just downstream of known infestations of English ivy and reed canary grass. This area is at the bottom of a high river bluff and access is limited. Project activities will include: evaluation of the area for invasive weeds; removal of invasive species; and planting of native trees and shrubs to shade out invasives.	4	-1	Will "protect" the long-term habitat features	3	Degraded Habitat-Riparian Areas and LWD Recruitment	2001 Nisqually Chinook Recovery Plan
		South Wilcox Flats Restoration Phase 2	11-MAINSTEM-1020	Active	Restoration Projects	Capital	South Wilcox Flats Riparian Restoration - Phase II	Removal of invasive species was started at this site in 2010. Native trees and shrubs will be planted in 2011 on 15+ acres owned by the Nisqually Land Trust on the Thurston County side of the Nisqually mainstem along the Wilcox Reach. This planting will enhance existing riparian forest and fill in gaps created by previous residential and recreational use on the property.	4			4	Degraded Habitat-Riparian Areas and LWD Recruitment	2001 Nisqually Chinook Recovery Plan
		Peissner Upland Forest Restoration	11-MAINSTEM-1021	Active	Restoration Projects	Capital	Pleissner Upland Forest Restoration	This project will enhance 45 acres of poorly stocked forest on land adjacent to the Nisqually mainstem, just downstream of the confluence of Powell Creek and the Nisqually. Project activities will include: Control of invasive species on old logging roads and landings; and planting 9,000 native trees and shrubs.	4			4	Degraded Habitat-Water Quality	2001 Nisqually Chinook Recovery Plan
		Northern Powell Complex Restoration	11-MAINSTEM-1023	Active	Restoration Projects	Capital	North Powell Complex Riparian Restoration	Restoration of riparian forest habitat is ongoing on 46 acres in the channel migration zone along the middle reach of the Nisqually mainstem in Thurston County.	4	-1	Addresses major limiting factor in reach	3	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	2001 Nisqually Chinook Recovery Plan
		Thurston Ridge Boundary Protection	11-MAINSTEM-1018	Inactive	Restoration Projects	Non-Capital	Thurston Ridge Boundary Protection	This project will enhance and protect the upland boundary of over a mile of river bluff, off-channel habitat, and riparian forest along the Wilcox Reach of the Nisqually River. Activities will include: removal of debris and invasive species along the top of the bluff adjacent to a county road; dense planting of native shrubs along bluff edge; and installation of informational and boundary signs. If dumping and erosion-causing public access escalates at the site, the boundary should be fenced to protect the bluff riparian habitat.	1	2	Already purchased property; low risk to habitat features	3	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan

# Mainstem Nisqually Res

Major Strategy (Level 1-subbasin)	Initiative (Level 2)	Project (Level 3)	ID#	Project Status	Project Type	Plan Category	Project Name	Project Description	Priority Area	Principles modifier	Comments on modifier	Priority tier of project	Limiting Factors	Reference Document for limiting factor
Mainstem Nisqually Res	Powell/Nisqually mainstem off-channel reconnection	Powell/Nisqually mainstem off-channel reconnection	11-POWELL-1002	Completed 2010	Restoration Projects	Capital	Powell Creek/Nisqually Mainstem Off-Channel Reconnection	This project restored access for juvenile salmon to half of the largest off-channel wetland complex on the mainstem river. A series of culverts along a former logging haul road were removed and the road was abandoned and planted. An old bridge abutment along the mainstem of the river was also removed. Phase 2 of the project removed a culvert from Elbow Lake Creek, just upstream of where Elbow Lake Creek joins Powell Creek. Monitoring and maintenance of the project area is ongoing and includes control of invasive species and supplemental plantings.	4	-1	Major limiting factor in otherwise pristine mainstem reach	3	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Stream Flow, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	2001 Nisqually Chinook Recovery Plan
		Tanwax Nisqually Confluence Acquisition	11-MAINSTEM-1033	New-2011	Acquisition for Protection		Tanwax/Nisqually Confluence Acquisition	Acquire for permanent protection approximately 33 acres of shoreline property along lower Tanwax Creek and the Nisqually River, including the confluence of the two streams. The property is adjacent to shoreline property already owned by the applicant, and will expand the block of protected Nisqually River shoreline property by approximately 1/4 river miles. It will also permanently protect the lower &#188; miles of Tanwax Creek, an important tributary stream to the Nisqually River.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	
		Nisqually/Powell Protection Ph II	11-MAINSTEM-1034	New-2011	Acquisition for Protection		Nisqually-Powell Floodplain Protection	Current Nisqually Land Trust ownership includes the confluence of the Nisqually River and Powell Creek, and a mosaic of surrounding floodplain and riparian habitats. This project will protect an additional 5+ acres in the area permanently protected in the channel migration zone along the Middle Reach of the Nisqually.	2 or 3			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment	
	Nisqually to Point Defiance Restoration & Protection	Nisqually to Pt. Defiance nearshore restoration	11-NEARSHORE-1005	Inactive	Restoration Projects	Capital		This project is assessing nearshore habitat between the Nisqually River and Point Defiance to identify potential restoration projects likely to benefit salmon. Both the WRIA 11 and WRIA 12 limiting factors analyses noted the poor habitat condition of this shoreline, including estuarine habitat loss and impacts from rail line fill. Burlington Northern is a cooperating partner on this project. A final report will identify and prioritize potential restoration project sites. Preliminary engineering designs and landowner agreements will be developed for restoration at 2-3 specific project sites. The project construction proposed for 2010 would be the implementation of one of these projects. Because the assessment is still under development the cost estimate for project construction is quite rough at this point. (also listed under capital projects)	2			2	Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Flow, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	2001 Nisqually Chinook Recovery Plan
		Sequalitchew Estuarine Restoration Design	11-NEARSHORE-1006	Active	Future Habitat Project Development	Non-Capital	Sequalitchew Estuarine Restoration Design	Restore fish passage and tidal hydrology to the Sequalitchew Creek estuary. The Sequalitchew estuary has been highly impacted by the BNSF causeway which has severed the connection between the estuary and the Puget Sound except through a small 5-foot diameter concrete box culvert. Additionally, a remnant bulkhead and pilings from the decommissioned DuPont ammunitions dock constrains the upper beach profile and limits riparian, fringe habitat. This project will explore feasibility and design options for restoring estuarine and beach processes through installation of a new structure/pile trestle in place of the causeway, removal of derelict creosote pilings and bulkhead structures, restore natural beach profile, remove invasive plants and restore native, marine riparian corridor.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Flow, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	2001 Nisqually Chinook Recovery Plan
		Chambers Bay Estuarine and Riparian Enhancement	11-NEARSHORE-1007	Active	Acquisition and Restoration Projects	Capital	Chambers Bay Estuarine and Riparian Enhancement, Design	Enhance estuarine habitat structure within Chambers Bay through active restoration and creation of salt marsh habitat within the Bay. Restore marine riparian corridor in and around Chambers Bay through removal of invasive vegetation and planting of native trees and shrubs. Acquire Mill property and remove dam and estuarine fill. Issues: <ul style="list-style-type: none"> <li>Industrial use practices of Chambers Bay for timber storage.</li> <li>Construction of road and mill site over the historic estuarine area.</li> <li>Construction of dam which has reduced sediment transport.</li> <li>Gravel mining operations on the north side of the bay which removed mature riparian forest</li> <li>Construction of the BNSF railway which changed the connection of the estuary to Puget Sound.</li> </ul> Chambers Bay is the major estuarine feature between the Nisqually River and Central-North Sound. Given the current lack of habitat structure and food production inside the Bay, this historically important habitat feature now provides limited refuge, rearing and foraging capacity for migrating salmonids.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan
		East Nisqually Reach Beach Nourishment Pilot	11-NEARSHORE-1008	Inactive	Restoration Projects	Capital	East Nisqually Reach Beach Nourishment Pilot	Initiate a pilot beach restoration and marine riparian planting project on existing pocket beaches persisting seaward of the BNSF railline between Sequalitchew Creek and Solo Point to track and streamline beach nourishment and riparian enhancement techniques along the degraded shoreline. The shoreline between Nisqually and Point Defiance has been highly degraded due to shoreline development and the location of the BNSF railway at or below the MHHW effectively truncating and severing functional nearshore habitat. The shoreline has very little functional beach habitat to support migration, foraging and rearing needs of juvenile salmonids and forage fish spawning capacity. Several small pocket beaches exist along the East Nisqually Reach, these beach support forage fish spawning and shallow water refugia. Without sediment input into the system, there is not material to feed and accrete these beach. This project seeks to actively nourish these pocket beaches and track the results of nourishment events to better understand this treatment as a viable restoration option.	2			2	Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan
		Chamber Beach Reconstruction and Riparian	11-NEARSHORE-1009	Inactive	Restoration Projects	Capital	Chambers Beach Reconstruction and Riparian Enhancement	Reconstruct a natural beach profile along Chambers Beach through removal of derelict structures, active nourishment of degraded areas and reconstruction of back beach berm where the bank is unstable. Restore a riparian corridor through removal of invasive species and planting of native vegetation. Issues: <ul style="list-style-type: none"> <li>Lack of riparian corridor along the Chambers Beach and presence of several derelict structures located within the intertidal zone.</li> <li>Lack of continuous functional habitat along the Nisqually to Point Defiance shoreline.</li> <li>Beach and bank instability as a result of gravel mining operations.</li> </ul> The shoreline between Nisqually and Point Defiance has been highly degraded due to shoreline development and the location of the BNSF railway at or below the MHHW. The shoreline has very little functional beach habitat to support migration, foraging and rearing needs of juvenile salmonids and forage fish spawning capacity. The 1.5-mile project reach has some existing function as the BNSF causeway is set back from the shoreline and presents an opportunity to support a riparian corridor, backshore berm, beach face and low-tide terrace. However a legacy of gravel mining has significantly disturbed the beach creating instability, degraded beach profiles and little to no native riparian vegetation.	2			2	Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan

Riparian Restoration & Protection

Major Strategy (Level 1-subbasin)	Initiative (Level 2)	Project (Level 3)	ID#	Project Status	Project Type	Plan Category	Project Name	Project Description	Priority Area	Principles modifier	Comments on modifier	Priority tier of project	Limiting Factors	Reference Document for limiting factor
Riparian Restoration & Protection	Thurston Shoreline Projects	Titlow Estuary Restoration	11-NEARSHORE-1010	Active	Restoration Projects	Capital	Titlow Estuary Restoration	Replace culvert/dredgate through BNSF railroad to improve connectivity and fish passage between Titlow lagoon and Puget Sound. Remove shoreline armor and derelict structure to restore/enhance the shoreline.  A tidegate installed through the BNSF causeway blocks fish passage and inhibits tidal exchange within the lagoon. Native vegetation and habitat structure has been removed from the lagoon limiting rearing and foraging capacity of the lagoon. Shoreline armor associated with the BNSF railway and park infrastructure impairs beach and riparian processes. Derelict piles within the intertidal-subtidal region inhibit sediment transport.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan
		Ketron Island Protection	11-NEARSHORE-1016	Inactive	Acquisition for Protection	Capital	Ketron Island Protection Project	Protect any functioning habitat along Ketron Island's shoreline	4	-2	EDT scale problems	2	Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan
	Kitsap Peninsula & Islands Nearshore	Hogum Bay restoration	11-NEARSHORE-1003	Inactive	Restoration Projects	Capital	Hogum Bay Riparian Restoration	Mallard Cove, a small pocket estuary just west of the Nisqually Estuary, is situated along the shore of Hogum Bay and is protected by the Nisqually Land Trust. The Land Trust completed a management plan for these properties in 2010, which identified the following tasks: invasive species removal - ivy, spurge laurel, and blackberry; removal of 3 culverts from abandoned road; and understory planting to enhance forest species diversity. The management plan also identified additional protection priorities in the area.  2010 Land Trust staff removed spurge laurel from edge of lagoon; 2011 Land Trust staff and volunteers working on removing ivy from edges of bluffs and upland areas	2	1	Already purchased property; low risk to habitat features; very small scale	3	Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Substrate	2001 Nisqually Chinook Recovery Plan
		Filicy Bay Bulkhead removal	11-NEARSHORE-1012	Active	Restoration Projects	Capital	Filicy Bay Bulkhead Removal	The project is located on the north eastern side of Filicy Bay near a small embayment and perennial stream. Projects sponsors will work with two landowners to remove a 250-foot long wooden pile and rip rap bulkhead near the mouth of perennial stream. Removal of the bulkhead will include installation of woody structure to tie into adjacent back beach and salt marsh habitat.	2			2	Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan
	'Independent Projects'	East Oro bay restoration	11-NEARSHORE-1011	Inactive	Restoration Projects		East Oro Bay restoration	This project seeks to remove an earthen dam impounding the upper sections of finger estuary in East Oro bay. Bay removal will restore tidal connectivity and estuarine processes to a salt marsh wetland.	2			2	Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	2001 Nisqually Chinook Recovery Plan
		VonGeldern Cove Bulkhead removal	11-NEARSHORE-1014	Active	Restoration Projects	Capital	VonGeldern Cove Bulkhead Removal	This project is located on the north eastern end of Von Geldern Cove on the Key Peninsula in Carr Inlet. Project sponsors will work with at least one, and up to five landowners, to remove a wooden, pile bulkhead and shoreline armor. Removal of the bulkhead will include restoration of a natural beach profile and re-vegetation of the shoreline.	2			2	Degraded Habitat-Estuarine and Nearshore Marine	2002 Nisqually Chinook Recovery Plan
		Penrose Point Bulkhead removal	11-NEARSHORE-1015	Active	Restoration Projects	Capital	Penrose Point Bulkhead Removal	The project is located on a marine shoreline just southwest of Penrose Point in Penrose Point State Park on the east side of the Key Peninsula in Carr Inlet. The project reach consists of a bluff backed beach that leads into an estuarine embayment with three small freshwater unnamed tributaries entering the head of the embayment. A 750-foot long creosote bulkhead encroaches on a portion of an otherwise pristine beach. The Penrose Point Bulkhead Removal Project proposes to remove the creosote bulkhead and associated armor and fill to restore/reconstruct the natural beach profile and restore processes at Penrose Point State Park.	2			2	Degraded Habitat-Estuarine and Nearshore Marine	2003 Nisqually Chinook Recovery Plan
	Mashel Eatonville Reach Restoration & Protection	South Sound nearshore protection	11-NEARSHORE-1004	Active	Acquisition for Protection	Capital	South Sound Nearshore Protection Project	Protection of nearshore has been identified as a high priority but no specific sites have yet been identified. This cost estimate is more preliminary.	4	-2	EDT scale problem	2	Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Flow, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	2001 Nisqually Chinook Recovery Plan
		Mashel Eatonville restoration - Phase II	11-MASHEL-1005	Completed 2010	Restoration Projects	Capital	Mashel Eatonville Restoration Phase II	This project will restore habitat diversity in 2000 feet of the highest priority reaches of the Mashel River and protect and restore over 6 acres of the riparian buffer. 10 engineered log jams and log structures will be installed. In combination with adjacent work happening simultaneously by the Washington Dept. of Transportation in the same location, and the completed Phase I, the project will install 22 log structures that will increase pool habitat, increase stable and high quality spawning habitat, increase floodplain connections and decrease bank erosion and mass wasting. These actions are identified as one of the three highest priority restoration activities in the Nisqually watershed chapter of the NOAA approved Puget Sound Chinook Recovery Plan. This project will significantly advance the high priority restoration implementation in the Nisqually watershed by moving the restoration of the Mashel substantially towards completion. In the long term this project will contribute to a more sustainable, healthy run of salmon, both the listed species as well as other non-listed salmonids. This will have ecological benefits not just for the salmon but for all the other species that depend on salmon. It will also have significant long term socio economic benefits in terms of increased commercial and sportfishing opportunity in Puget Sound and the lower Nisqually River and increased tourism in the rural Eatonville area as people come to view the salmon and fish for trout in the Mashel.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Stream Flow, Degraded Habitat-Estuarine and Nearshore Marine, Biological Processes	Nisqually Chinook Recovery Plan, Mashel Restoration Plan (PCD, 2004)
		Mashel Eatonville restoration - Phase III	11-MASHEL-1006	Inactive	Restoration Projects	Capital	Mashel Eatonville Restoration Phase III	Restore the in-stream, riparian and floodplain habitat of the Mashel River through the Eatonville Segment Reach 7. This would include riparian and instream restoration of 0.5km of the Mashel River at the Little Mashel River confluence. Instream restoration would entail installation of over 10 engineered log jams to reactivate the floodplain and create in-stream complexity.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Stream Flow, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine, Biological Processes	NCRP
Mashel Eatonville Protection Initiative (update)		11-MASHEL-1002	Active	Acquisition for Protection	Capital	Mashel Eatonville Reach Protection Initiative	This project proposes to acquire an additional 105 acres and .75 miles in two acquisitions. This project supports and expands Phases I and II of the Mashel Eatonville Reach Instream Restoration Project. Of the proposed acquisitions, 68 acres form the main holding and historic homestead of the Van Eaton Family, the founders of Eatonville, near the confluence of the Mashel and Little Mashel rivers. The Land Trust holds an option to buy the property at appraised value by 2012. Securing it will protect .25 miles of salmon-producing shoreline; 30 acres of mature riparian forest in excellent condition; 20 acres of mature conifer upland forest that buffers the riparian zone; and 18 acres of Class II wetlands. This acquisition directly adjoins 43 acres already in Land Trust or Town of Eatonville ownership and would permanently secure the only existing access to Phase II of the Mashel Eatonville Reach Instream Restoration Project, which is critical to the project's long-term success. Currently, the Land Trust has an access easement over the property that expires in 2013. The Hamilton Family owns the other property, which is located on the Mashel River in Eatonville and includes 27 acres and .5 miles of salmon-producing shoreline with a minimum of 500 feet of riparian buffer.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan	
Mashel Riparian Habitat Acquisition Project		11-MASHEL-1003	Completed 2010	Acquisition for Protection	Capital	Mashel Riparian Habitat Acquisition Project	The Town of Eatonville purchased 72 contiguous acres and .33 miles of undeveloped Mashel River shoreline in the Eatonville area with a minimum 400-foot riparian buffer. As grant match for the purchase the Nisqually Land Trust transferred 50 acres and 0.8 shoreline miles into Town of Eatonville ownership with a conservation easement that provides permanent access for salmon-recovery work.  These properties protect and make permanently available for maintenance and restoration Phase I and II of the Mashel Eatonville Reach Restoration Project and form the heart of the 2.7-mile Mashel River Protection Initiative. They contain excellent riparian habitat and include a proposed loop trail along the river for public access. Their permanent protection prevents their development as residential real estate.	2			2	Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Stream Substrate, Degraded Habitat-Water Quality	2001 Nisqually Chinook Recovery Plan	

Major Strategy (Level 1-subbasin)	Initiative (Level 2)	Project (Level 3)	ID#	Project Status	Project Type	Plan Category	Project Name	Project Description	Priority Area	Principles modifier	Comments on modifier	Priority tier of project	Limiting Factors	Reference Document for limiting factor
Mashel River	Independent Projects	Mashel Eatonville Shoreline Riparian Enhancement	11-MASHEL-1011	New-2011	Restoration Projects	Capital	Mashel Eatonville Shoreline Riparian Enhancement	The Nisqually Land Trust will work in partnership with the Town of Eatonville to control invasive species and enhance riparian forest species composition on protected properties in the Mashel Eatonville Reach.	2			2	Degraded Habitat-Riparian Areas and LWD Recruitment	
		Mashel Middle Reach Protection Project	11-MASHEL-1007	Active	Acquisition for Protection	Capital	Mashel Middle Reach Protection	Acquire 300+ acres and 3.0+ miles of Mashel River shoreline upstream of Boxcar Canyon and Phase I of the Mashel Eatonville Reach Instream Restoration Project.  The Mashel River and surrounding property upstream of Boxcar Canyon is owned by timber investment management organizations that are actively seeking to sell. These properties include both banks of the Mashel River, steep bluffs along the river, and undeveloped, industrial timberland in the upland ranging in stand age from 15 to 80 years.  Acquiring the property would nearly double the scope of the Mashel Eatonville Reach Protection Initiative and significantly buffer Phase I of the restoration project. Protection of salmon habitat in this reach of the Mashel is rated high priority by the Nisqually Chinook Recovery Plan.  Acquiring this property would also prevent timber harvest immediately above the river's riparian zone on either bank.	2			2	Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	2001 Nisqually Chinook Recovery Plan
		Middle Mashel Riparian Enhancement	11-MASHEL-1009	New-2011	Restoration Projects	Capital	Middle Mashel Riparian Enhancement	This project will restore degraded portions of the riparian zone along the Mashel River upstream of RM 6.0 and the town of Eatonville – an area that is in timber production and owned primarily by private timber companies - and will include enhancement plantings within existing buffers as well as plantings that increase buffer width to ensure a sustainable source of LWD and adequate channel shading. A shade deficit map of the Mashel river will be developed to determine areas that currently exhibit riparian buffers of inadequate width and composition. Activities will include: identification of willing landowners, individual site assessments, development of restoration plans, control of invasive plants and riparian revegetation plantings.	2			2	Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	Nisqually Chinook Recovery Plan
		Mashel Basin Monitoring Plan	11-MASHEL-1004	Inactive	Habitat Project Monitoring	Non-capital	Mashel Monitoring Plan	Monitoring the physical and biological response to the Mashel river restoration work.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Flow, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine	Nisqually Chinook Recovery Plan, Mashel Restoration Plan (PCD, 2004)
		Mashel River Flow Enhancement Investigation	11-MASHEL-1010	New-2011	Future Habitat Project Development	Non-capital	Mashel River Flow Enhancement Investigation	This proposal recommends conducting a study to determine the feasibility of supplementing stream flows to the Mashel River.	2			2	Degraded Habitat-Stream Flow Degraded Habitat-Water Quality	2005 Mashel instream Flow Investigation (Golder Associates)
ek Restoration & Protection	Lower Ohop Restoration & Protection	Lower Ohop Valley Restoration - Phase I	11-OHOP-1001	Active	Restoration Projects	Capital	Lower Ohop Valley Restoration - Phase I	Evaluation of multi-species salmon habitat needs in the Nisqually watershed have ranked lower Ohop Creek one of the highest priority freshwater habitats for restoration. Funded by a previous SRFB grant, a restoration plan for lower Ohop Creek was developed which summarizes habitat conditions in the project reach and evaluates restoration alternatives. Using that assessment, the most comprehensive restoration alternative has been selected and engineering designs developed. The 17 landowners in the project reach are all supportive of this option. The total project will re-elevate the 4.4 miles of severely channelized creek back into its original floodplain recreating a 6 mile long stream with its original meander pattern and restoring its hydrologic connection to the adjacent floodplain and wetland areas. Off-channel habitat will be created and the riparian areas will be planted with native vegetation. The project will also revegetate 400 acres of the surrounding valley floor which is dominated by wetlands. This project has been split into three phases to spread out the need for securing funding: Phase I: Restore first mile of Lower Ohop Creek on Nisqually Land Trust property adjacent to Hwy. 7, including channel reconstruction and valley floor revegetation.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Non-Habitat Limiting Factors, Degraded Habitat-Stream Flow, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	2001 Nisqually Chinook Recovery Plan
		Lower Ohop Valley Restoration - Phase II	11-OHOP-1002	Active	Restoration Projects	Capital	Lower Ohop Valley Restoration - Phase II	Evaluation of multi-species salmon habitat needs in the Nisqually watershed have ranked lower Ohop Creek one of the highest priority freshwater habitats for restoration. Funded by a previous SRFB grant, a restoration plan for lower Ohop Creek was developed which summarizes habitat conditions in the project reach and evaluates restoration alternatives. Using that assessment, the most comprehensive restoration alternative has been selected and engineering designs developed. The 17 landowners in the project reach are all supportive of this option. The total project will re-elevate the 4.4 miles of severely channelized creek back into its original floodplain recreating a 6 mile long stream with its original meander pattern and restoring its hydrologic connection to the adjacent floodplain and wetland areas. Off-channel habitat will be created and the riparian areas will be planted with native vegetation. The project will also revegetate 400 acres of the surrounding valley floor which is dominated by wetlands. This project has been split into three phases to spread out the need for securing funding: Phase II: Restore 1.5 miles of Lower Ohop Creek below Hwy. 7 including channel reconstruction and valley floor revegetation.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Non-Habitat Limiting Factors, Degraded Habitat-Stream Flow, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	2001 Nisqually Chinook Recovery Plan
		Lower Ohop Valley Restoration - Phase III	11-OHOP-1003	Inactive	Restoration Projects	Capital	Lower Ohop Valley Restoration - Phase III	Evaluation of multi-species salmon habitat needs in the Nisqually watershed have ranked lower Ohop Creek one of the highest priority freshwater habitats for restoration. Funded by a previous SRFB grant, a restoration plan for lower Ohop Creek was developed which summarizes habitat conditions in the project reach and evaluates restoration alternatives. Using that assessment, the most comprehensive restoration alternative has been selected and engineering designs developed. The 17 landowners in the project reach are all supportive of this option. The total project will re-elevate the 4.4 miles of severely channelized creek back into its original floodplain recreating a 6 mile long stream with its original meander pattern and restoring its hydrologic connection to the adjacent floodplain and wetland areas. Off-channel habitat will be created and the riparian areas will be planted with native vegetation. The project will also revegetate 400 acres of the surrounding valley floor which is dominated by wetlands. This project has been split into three phases to spread out the need for securing funding: Phase III: Restore over 2 miles of Lower Ohop Creek upstream of first two phases of project including channel reconstruction and valley floor revegetation.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Non-Habitat Limiting Factors, Degraded Habitat-Stream Flow, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	2001 Nisqually Chinook Recovery Plan
		Lower Ohop protection project	11-OHOP-1004	Active	Acquisition for Restoration	Capital	Lower Ohop Protection Project	This project would acquire 100 acres and one mile of lower Ohop Creek, which is rated highest priority for permanent habitat protection in the Nisqually Chinook Salmon Recovery Plan. This is a key property for permanent protection because it would connect the recently completed 1.1-mile restoration of the creek's original channel with the mainstem Nisqually River, thus assuring the project's success. It would also ensure the long-term stewardship of the site for salmon and other wildlife.	3	-1	Protection to make restoration available	2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Non-Habitat Limiting Factors, Degraded Habitat-Stream Flow, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	2001 Nisqually Chinook Recovery Plan

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Ohop Cre		Ohop monitoring plan	11-OHOP-1006	Active	Habitat Project Monitoring	Non-capital	Ohop Monitoring Plan	Monitor the effectiveness of the Ohop Creek restoration project both in physical and biological responses.	2		same as restoration	2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Non-Habitat Limiting Factors, Degraded Habitat-Stream Flow, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	Nisqually Chinook Recovery Plan
		Lower Ohop Upland Restoration	11-OHOP-1007	Inactive	Restoration Projects	Capital	Lower Ohop Upland Restoration	The Nisqually Land Trust owns 95+ acres of valley bluff and uplands around the Lower Ohop creek and floodplain restoration site. Repairs to a historic barn were made in 2010 and debris and invasive species were removed from around the barn. Additional restoration needs on Land Trust property include: continued intensive invasive species control; removal of debris; demolition of structures; and reforestation.	3	1	does not address limiting factor	4	Degraded Habitat-Water Quality	2001 Nisqually Chinook Recovery Plan
	'Independent Projects'	Upper Ohop Valley protection	11-OHOP-1005	Inactive	Acquisition for Protection	Capital	Upper Ohop Valley Protection	Protection of 180 acres of Ohop valley including large amounts of wetland and 1 mile of Ohop Creek. The protection of this functioning habitat benefits a array of fish and wildlife, including salmon of upper Ohop Creek, 25-Mile Creek and a third, unnamed tributary.	3			3	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Substrate	2001 Nisqually Chinook Recovery Plan
		Middle Ohop Restoration Project	11-OHOP-1008	Active	Restoration Projects	Capital	Middle Ohop Revegetation Project	This project will restore degraded portions of the riparian zone along over two miles of Ohop Creek between river mile 4 and Ohop Lake by revegetating the valley floor with native trees and shrubs. Activities include: identification of willing landowners, individual site assessments, development of restoration plans, control of invasive species and valley floor revegetation. Cleared areas will be replanted. Secondary deciduous floodplain forests will be underplanted with native conifer species to provide a sustainable source of LWD. Restoration planning will include additional recommendations for habitat enhancement. This project will connect with the Lower Ohop Valley Restoration Project – Phases I, II and III in an attempt to provide an extended habitat corridor.	2			2	Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	Nisqually Chinook Recovery Plan
		Middle Ohop Protection Project	11-OHOP-1010	New-2011	Acquisition for Protection	Capital	Middle Ohop Property Protection	Acquire a conservation easement over 38 acres and over 5 river miles along Ohop Creek that includes the protection of a Chinook spawning reach in upper Ohop watershed. The riparian portion of the property was recently planted to improve the habitat condition along the creek. The balance of the property is partially included in the Eatonville UGA and is currently owned by a commercial developer. The conservation easement could be secured at a bargain sale.	3			3	Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	
Small Tributary Restoration & Protection	Red Salmon Creek Projects	Forespring Property Protection	11-RSSWASH-1002	Active	Acquisition for Restoration	Capital	Forespring Property Protection	Red Salmon Creek is an independent tributary to the Nisqually Delta. It is utilized primarily by chum salmon, but also by coho, steelhead and cutthroat trout. The health of the down-gradient Nisqually estuary depends on the water quality and quantity from this spring fed creek.  Red Salmon Creek is fed by springs that arise on the subject property and act as the headwaters of the stream. The purpose of this project is to permanently protect a 40-acre tract of land at these headwaters. The project sponsors would like to own the property in fee and manage the spring and adjacent habitat land. Unfortunately, the property is a significant source of invasive species in the Red Salmon Creek Watershed. Currently, the Forespring Family Trust owns this land, are willing to consider a conservation easement to extinguish development potential and protect the spring fed headwater area. This land is adjacent to the Dupont UGA that is now built out and the property is increasingly under more development pressure.	4	-1	close proximity and connection to highest priority estuary	3		2001 Nisqually Chinook Recovery Plan
		Red Salmon Creek Headwaters	11-RSSWASH-1003	Inactive	Restoration Projects	Capital	Red Salmon Creek Headwaters	This project has two components: restoration of a 3.5 acre property that conducts water from seeps along 1-5 to Red Salmon Creek and contains springs that drain to Red Salmon Creek; and outreach to neighboring landowners about controlling the non-native, invasive plant species that have been removed from the lower reaches of the streams in the Red Salmon Watershed. The Land Trust will work with partners to implement an outreach program to inform neighboring upstream landowners about the impacts of English Ivy, Himalayan blackberry, and other invasive species that are commonly used for landscaping purposes and found in the watershed. Restoration activities will include removal of debris and extensive areas of English ivy, Himalayan blackberry and other invasive species from the 3.5 acre property; and planting of native trees and shrubs on the property.	4			4	Degraded Habitat-Riparian Areas and LWD Recruitment	2001 Nisqually Chinook Recovery Plan
		D. Braget Property Protection	11-RSSWASH-1004	New-2011	Acquisition for Protection		D. Braget Property Protection	Acquire 5 acres of riparian forest adjacent to existing Land Trust property in the Red Salmon Creek watershed. The property is upstream of recently restored sections of Red Salmon and Washburn creeks and provides a buffer between the restoration areas and a housing development upstream. This property contains approximately 400 feet of Washburn Creek and 200 feet of Red Salmon Creek.	4			4	Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality	
	Horn Creek Fish Passage Projects	Horn Cr Fish passage project	11-HORNHARTS-1001	Inactive	Restoration Projects	Capital	Horn Creek Fish Passage Project	Replace partial fish barrier at Horn Creek. A man-made waterfall at river mile 1.0 precludes most salmon from migration upstream. Greatest benefit will be to coho and chum with some benefit also for steelhead. There is a partial barrier just upstream of this site under Harts Lake Loop Road that should also be addressed to ensure full access to the stream for salmon.	4			4	Degraded Habitat-Fish Passage	NCRP

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Restoration & Protection	Muck Creek Basin Projects	Harts Lk Loop Rd Horn Cr culvert replacement	11-HORNHARTS-1002	Inactive	Restoration Projects	Capital	Harts Lake Loop Road Horn Creek Culvert Replacement Project	This project will replace the partial fish passage barrier at Harts Lake Loop Rd. (RM 1.2) and replace it with a bottomless arch culvert that would open up several miles of salmon habitat upstream. This project should be considered in connection with the Horn Creek Fish Passage Project that is located just downstream to obtain maximum benefit.	4	-1	Addreses major limiting factor in entire basin	3	Degraded Habitat-Fish Passage	PCD culvert inventory
		Lower Lacamas Creek Riparian Restoration	11-MUCK-1001	Inactive	Acquisition for Protection	Capital	Lower Lacamas Creek Riparian Restoration	A total of approximately 4.6 miles of potential stream restoration area have been identified within this stream reach. It is unlikely that all the potential restoration sites will be accessible. The budget would be sufficient for restoration of nearly 2.2 miles of stream reach.	4			4	Stream habitat, water quality, LWD	Muck Creek Basin Plan
		North Fork Muck Creek Restoration	11-MUCK-1002	Inactive	Restoration Projects	Capital	North Fork Muck Creek Restoration	A total of approximately 5.6 miles of potential stream restoration area have been identified within this stream reach. It is unlikely that all the potential restoration sites will be accessible. The budget would be sufficient for restoration of approximately 2.5 miles of stream reach.	4			4	Stream habitat, water quality, LWD	Muck Creek Basin Plan
		South Muck Creek Restoration	11-MUCK-1003	Inactive	Restoration Projects	Capital	South Muck Creek Restoration	A total of approximately 1.9 miles of potential stream restoration area have been identified within this stream reach. Some of the areas to be restored could include wetlands, for increased flow attenuation to the Creek. It is unlikely that all the potential restoration sites will be accessible. The budget would be sufficient for restoration of approximately .8 miles of stream reach. Funds are budgeted for 1 acre of wetland restoration during the plan period.	3			3	Stream habitat, water quality, LWD	Muck Creek Basin Plan
		Muck Creek Basin Floodplain Acquisition	11-MUCK-1004	Inactive	Acquisition for Protection	Capital	Muck Creek Basin Floodplain Acquisition	The headwaters of the North Fork of Muck Creek are at Patterson Springs, in the Graham area. The area has been under development pressure. A large amount of land in the area has been acquired by other agencies to ensure its preservation as a resource area. Approximately 350 acres of land have been identified as desirable for acquisition. Some of the purchases may involve partnerships with other agencies. It is also assumed that not all properties	3			3	Stream habitat, water quality, LWD	Muck Creek Basin Plan
		Brighton Cr culvert replacement	11-BRIGHTON-1001	Inactive	Restoration Projects	Capital	Brighton Creek Culvert Replacement Project	Replace partial fish barrier culvert on Brighton Creek under Harts Lake Loop Road with a fish-friendly culvert. This culvert is highest priority culvert for replacement of any culvert assessed in the Nisqually watershed because it is a more complete barrier and there is still some good intact habitat upstream that is currently mostly inaccessible for salmon. It is however not rated a 1 because it is on a minor tributary to the Nisqually and will not have significant direct benefit for Chinook or steelhead. It will have greatest benefit to coho and chum as well as some smaller benefit for steelhead and indirect benefit for Chinook salmon.	4	-1	Addreses major limiting factor in entire basin	3	Degraded Habitat-Fish Passage	PCD culvert inventory
		Upper McKenna Creek culvert replacement	11-MCKENNA-1001	Active	Restoration Projects	Capital	Upper McKenna Creek culvert project	Replace a total fish-blocking culvert on McKenna Creek with a bridge or fish-friendly culvert to allow juveniles move into the large off-channel ponds located in the headwaters.	3	-1	Off-channel within McKenna mainstem reach	2	Degraded Habitat-Fish Passage	NROC Assessment
	Independent Projects	Toboton Cr at Peissner Rd culvert replacement	11-TOBOTON-1001	New-2011	Restoration Projects	Capital	Toboton @ Peissner Rd culvert replacement	Replace culvert with larger culvert	4			4	Degraded Habitat-Fish Passage	
		Powell Creek Watershed Restoration	11-POWELL-1004	Completed 2010	Restoration Projects	Non-Capital	Powell Creek Watershed Restoration	This project will educate and inform the Powell Creek watershed community about potential restoration actions in the watershed. This project will also identify new restoration projects.	4			4	Degraded Habitat-Stream Flow, Degraded Habitat-Fish Passage	NCRP
		Tanwax Creek Restoration	11-TANWAX-1001	Active	Restoration Projects	Capital	Tanwax Creek Riparian Restoration	The lower Tanwax Creek flows for 4.5 miles through a 98 acre riparian wetland that had been cleared and now consist of small shrubs and large amounts of reed canary grass. A 1998 wetland assessment of Nisqually basin wetlands identified this area as a high priority for restoration due to its benefits to salmon. This project would work with local volunteers and landowners to revegetate between 3 to 5 acres annually in this high priority area.	4	-1	Protection of area is tier 2, and this has high community support and exposure	3	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Substrate	1999 Nisq.Tribe Wetland Inventory
		Nisqually vegetation management	11-MISC-1001	Active	Restoration Projects	Capital	Nisqually Vegetation Management	An assessment of riparian vegetation in the Nisqually watershed was completed in 2004. There is a need to groundtruth the assessment, identify priority revegetation areas, and organize and implement projects. In addition, monitoring of invasive plants that threaten ecosystem processes and habitat must be ongoing. An invasive management plan needs to be developed that prioritizes weed species and areas for control and outlines control measures. This will fund 1 FTE biologist to develop and implement a watershed vegetation management plan and a 3 FTE crew to plant and maintain a minimum of 15 acres of riparian vegetation annually and control invasive plants in the watershed. The crew in particular is key to our long term success with vegetation projects. Without proper maintenance many revegetation projects will fail.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine	Nisqually Chinook Recovery Plan
	Watershed-wide Habitat Restoration and Enhancement	Nisqually basin farm planning	11-MISC-1002	Inactive	Restoration Projects	Non-capital	Nisqually Basin Farm Planning	One FTE farm planner/habitat specialist each for Pierce and Thurston Conservation Districts with additional funds for cost share assistance. Each farm planner would conduct targeted outreach to farms in high priority salmon reaches of the Nisqually. Farm plans would be developed for willing landowners and cost-share and technical assistance would be provided for implementation.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Flow, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage	Nisqually Chinook Recovery Plan
		Carcass Project	11-MISC-1004	Active	Restoration Projects	Capital	Salmon Carcass Nutrient Enhancement	The Nisqually Tribe has managed a project to return salmon carcasses to the watershed from the Tribes hatchery for the last five years. Program staff that help in implementation include our Restoration Biologist, Volunteer Coordinator, and our Technician. The Restoration Biologist develops an annual plan for carcass distribution including locations, amounts and timing using our best available scientific understanding of the system. Our Technician helps collect and store the carcasses at the hatchery. The Volunteer Coordinator, with the assistance of the Biologist and the Technician, organizes and leads community volunteer events to distribute the carcasses according to the plan. This is identified as an ongoing program to continue to jumpstart the nutrient food web in key salmon streams	2	-1	Does not address major limiting factor, not process restoration	3	Degraded Habitat-Water Quality, Non-Habitat Limiting Factors	Nisqually Chinook Recovery Plan
		Thurston County CAO revision	11-MISC-1010	Active	Habitat Protection	Non-capital	Thurston County CAO Revision	Thurston County staff time to do required updates to Thurston Countys Critical Area Ordinance.	2	0		2		Nisqually Chinook Recovery Plan
		Thurston County Shoreline Master program revision	11-MISC-1011	Active	Habitat Protection		Thurston County Shoreline Master Program Revision	Thurston County staff time to do required updates to the countys Shoreline Master Program.	2	0		2		Nisqually Chinook Recovery Plan

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Nisqually Watershed-Wide	Regulatory Habitat Protection	Pierce County Shoreline Master program revision	11-MISC-1012	Active	Habitat Protection	Non-Capital	Pierce County Shoreline Master Program Revision		2	0		2		Nisqually Chinook Recovery Plan	
		Forest and Fish project	11-MISC-1013	Active	Habitat Protection	Non-capital	Forest and Fish Prescription Implementation Monitoring/Tech. Assistance	This 1 FTE would support the continued monitoring of forest practices to ensure consistency with the Forest and Fish agreement and the Nisqually salmon recovery plan.	2			2	Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat-Fish Passage		
		DNR Aquatic HCP planning	11-MISC-1009	Active	Habitat Protection	Non-Capital Project	DNR Aquatic HCP Planning	Washington DNR is in consultation with the USFWS for an Aquatic HCP, that at this time would cover all waters (tidal and non-tidal). The USFWS will dedicate 1 FTE to this consultation for potentially the next three years. DNR will probably cover the costs of that FTE.	2	1	small impact on process	3	Degraded Habitat-Water Quality	Nisqually Chinook Recovery Plan	
	Habitat Protection	Knotweed Control	11-MISC-1003	Active	Restoration Projects	Non-capital	Japanese Knotweed Eradication	Annually identify and eradicate Japanese Knotweed infestations in the Nisqually River basin. This seasonal work would take 3 technicians and one project manager up to 3 months for 3 years to stem the spread of this highly invasive weed. The focus will be the riparian and floodplain forests of salmon-bearing streams. Waterways in the non-anadromous area of the basin will also be treated if downstream infestation from those source areas is deemed probable.	2	0	does not address limiting factor, but addresses potential large future problem	2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine	Nisqually Chinook Recovery Plan	
		NLT property stewardship/natural resource management	11-MISC-1007	Active	Habitat Protection	Non-capital	Nisqually Land Trust Property Stewardship	By the end of 2009 the Land Trust will own approximately 1550 acres in the salmon-producing section of the Nisqually River. It is essential to have the resources to continue to manage the properties for protection of their habitat value. In total, then, the annual stewardship costs will be approximately \$58,125, or about \$174,375 for the 2009-2011 period. Currently, NLT has a small endowment that will generate approximately \$3,000 per year for stewardship. In addition for general support of volunteer coordination and education associated with stewardship activities, NLT estimates it needs an additional \$10,000/yr to support that work.	2		protection of potentially high priority areas	2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan	
		Protection enforcement on NWR	11-ESTUARY-1005	Active	Habitat Protection	Non-Capital	Protection Enforcement on Nisqually Wildlife Refuge (Obj. 1.2)	Protect Nisqually National Wildlife Refuge lands from unauthorized human disturbances. One 0.5 FTE Refuge Enforcement Officer (\$31,100 annual cost)	1	2	Does not address limiting factor and minor problem for salmon	3		Salmon and Steelhead Limiting Factors WRIA 11, Nisqually NWR Final Comprehensive Conservation Plan, EDT analysis	
		Community Forest Initiative	11-MISC-1017	Significant Revisions 2011	Habitat Protection		Community Forest Initiative	The Nisqually Land Trust, Mount Rainier National Forest, and the Northwest Natural Resource Group, propose to develop a plan for creation of a community forest in the Nisqually Watershed. A community forest is a forest that is owned and managed by a municipal entity, nonprofit organization, or other such group on behalf of a community. The community participates in management decisions, and the forest is managed to provide a suite of benefits, typically including sustainable forestry, recreation, education, and environmental benefits such as clean water and habitat. This project will identify the key ownership and management partners; determine the broad outline of what lands the forest should encompass and how they should be managed; and make initial approaches to potential landowners.	?				Degraded Habitat-Water Quality		
	Stormwater Impact Reduction	Eatonville Stormwater Reduction Project	11-OHOP-1009	Active	Restoration Projects	Capital	Eatonville Stormwater Reduction Project	Work with Town of Eatonville to update stormwater plan and actively implement rain-garden challenge by installing 10 rain gardens annually. Supports the Stewardship Partners/WSU Extension campaign to install 12,000 Rain Gardens in Puget Sound by 2016.	2			2	Degraded Habitat-Water Quality, Water Quantity, Stream Substrate	2001 Nisqually Chinook Recovery Plan	
		Eatonville Stormwater Planning	11-OHOP-1011	Active	Habitat Protection/Future Habitat Project Development	Non-Capital	Eatonville Stormwater Management Plan Update	The Town of Eatonville will update its stormwater management plan. The update will have a special focus on identifying ways to incorporate retrofits and low impact development to infiltrate and treat the greatest possible percentage of Eatonville's stormwater.	2			2	Degraded Habitat-Water Quality, Water Quantity, Stream Substrate	2001 Nisqually Chinook Recovery Plan	
		Street Edge Alternative (SEA) street	11-MISC-1018	New-2011	Restoration Projects	Capital	Street Edge Alternative (SEA) Street	This "SEA Street" type retrofit will convert one block of a Town of Eatonville street using porous pavement and rain gardens in the right-of-way to infiltrate stormwater runoff. Projects in the right-of-way provide a model for project owners and developers in South Puget Sound. This SEA Street will be complete with rain gardens in the public right-of-way to capture any excess stormwater runoff from the street, sidewalks, and driveways.	2			2	Degraded Habitat-Water Quality, Water Quantity, Stream Substrate	2001 Nisqually Chinook Recovery Plan	
	Basin-wide Habitat Acquisition	Upper Watershed small properties protection	11-MISC-1006	Active	Acquisition for Protection	Capital	Upper Watershed Small Properties Protection	Acquire small properties along the highest priority streams in the upper watershed, Ohop Creek and the Mashel River. Projects would focus on areas with intact riparian function and channel migration zone, and seek to block with other parcels already in protected status.	2			2	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine	2001 Nisqually Chinook Recovery Plan	
	Community Outreach	Community Involvement and Education	Nisqually River Education Project	11-OUTREACH-1001	Active	Outreach and Education	Non-Capital	Nisqually River Education Project	The Nisqually River Education Project (NREP) brings students into the watershed for field-based environmental science experiences and habitat restoration projects that benefit both the classroom curriculum and the river habitat. NREP has the mission of creating students who are stewards of the Nisqually River watershed and the water resources in their community.	2			2		2001 Nisqually Chinook Recovery Plan
			Nisqually Stream Stewards	11-OUTREACH-1003	Active	Outreach and Education	Non-Capital	Nisqually Stream Stewards	Teach Nisqually River Watershed residents about stream health and involve residents in monitoring and improving the health of their local streams. Discuss environmental awareness issues and information with those who are in the program, so that they can apply that learning to their own lives and share the knowledge with others.	2			2		2001 Nisqually Chinook Recovery Plan
Landowner Incentives		Salmon Safe Certification	11-OUTREACH-1004	Active	Outreach and Education	Non-Capital	Salmon-Safe Certification Program	Salmon-Safe certification is a labeling and marketing program to recognize local agricultural landowners as well as urban land uses (corporate campuses, industrial sites, residential development and golf courses) that protect water quality and habitat benefiting native salmon and other wildlife as well as overall watershed health. The program evaluates practices to protect streams and wetlands, prevent soil erosion, practice water conservation, minimize chemical use, promote native biodiversity, and manage storm water to prevent polluted runoff. Stewardship Partners coordinates independent third party certification inspections and administers a variety of marketing and promotional activities in support of Salmon-Safe certified operations.	2			2		2001 Nisqually Chinook Recovery Plan	
		FSC market development	11-OUTREACH-1005	Inactive	Outreach and Education	Non-capital	FSC Market Development	NRRG and partners will work to develop the market for Forest Stewardship Council certified (and Nisqually Sustainable) branded wood products from local forests, stimulate local small scale manufacturing, and increase local use of local products. This will increase community investment in and understanding of local sustainable forestry and provide incentives for local forest owners leading to improved forest practices on the ground and improved local economies.	2			2		NCRP	
		Forest certification Program	11-OUTREACH-1006	Inactive	Outreach and Education	Non-capital	Forest Landowner Certification Program	The Northwest Natural Resource Group and partners are working to implement Forest Stewardship Council sustainable forestry certification within the Nisqually watershed. Sustainable forest certification can provide an economic incentive as well as third party verification for practices that lead to improved water quality and wildlife habitat on and downstream from working forests. The goal is to certify approximately 20 forest landowners per year in the watershed.	2			2		NCRP	
		Ecosystems Market Development	11-OUTREACH-1007	Inactive	Outreach and Education	Non-Capital Project	Ecosystem Services Market Development	NRRG and partners will work to develop the market for carbon offsets and water quality within the Nisqually Watershed. Carbon offset contracts can provide long term development restrictions and guarantee certified forest management for 100 years. Water quality trading can also provide for specific water quality improvements on forest land. Both markets provide incentives for improved practices leading to better habitat and improved water quality and regular quantity beyond regulatory requirements.	2			2		NCRP	

Major Strategy (Level 1-subbasin)	Initiative (Level 2)	Project (Level 3)	ID#	Project Status	Project Type	Plan Category	Project Name	Project Description	Priority Area	Principles modifier	Comments on modifier	Priority tier of project	Limiting Factors	Reference Document for limiting factor
Salmon Research, Monitoring and Evaluation	Salmon Recovery Plan Monitoring	Chinook Plan Habitat Monitoring	11-MISC-1014	Active	Habitat Project Monitoring	Non-capital	Nisqually Chinook Recovery Habitat Monitoring	Creation and implementation of a watershed-wide habitat and restoration action monitoring plan to assess effect of recovery plan.	1			1	Degraded Habitat-Floodplain Connectivity and Function, Degraded Habitat-Channel Structure and Complexity, Degraded Habitat-Riparian Areas and LWD Recruitment, Degraded Habitat-Water Quality, Non-Habitat Limiting Factors, Degraded Habitat-Stream Flow, Degraded Habitat-Stream Substrate, Degraded Habitat-Estuarine and Nearshore Marine, Degraded Habitat Fish Passage	NA

Habitat Type	Activity Type and Project Performance	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status	Year 1 Activity to be funded	Year 1 Estimated Budget	Year 2 Activity to be funded	Year 2 Estimated Budget	Year 3 Activity to be funded	Year 3 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)	Unfunded Need	Project Name	
Riparian, Estuary (River Delta)	Dike Removal (762 ac), Restore Elevation (surge plain 25 ac), Shoreline Armor Removal (2.5 ac), Wetland Planting (25 ac)	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Design Completed	Planting in riparian areas	100,000	Project complete	0	0	0	5/31/11	US Fish & Wildlife Service	1000000	1000000	PSAR, SRFB, ESRP, ARRA funds (boardwalk)	0	Nisqually Refuge Estuary Restoration 760 acres	11-ESTUARY-1001
Estuary (River Delta)	Plant Removal/Control (1000 ac)	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Conceptual		0	Hiring staff, project planning, invasive plant surveys, purchase of supplies, initial control measures, and begin IPM document.	60,000	ongoing surveys, IPM measures, and completion of IPM plan for refuge	60,000	12/31/2020	US Fish & Wildlife Service	180000	0	Not Yet Funded	180000	Invasive Species Management at NWR (obj. 1.4)	11-ESTUARY-1003
Estuary (River Delta)	Estuarine & Nearshore Dike or berm modification / removal (320 Acres)	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Feasibility Completed	Construction	300,000	Monitoring, replanting	20,000			12/31/2012	Nisqually Indian Tribe	320000	100000	ESRP, WA DNR, USFWS	0	Red Salmon Slough Estuary Restoration Phase 3	11-ESTUARY-1002
Estuary (River Delta)	Acquisition	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)		Identify parcels that may be available for acquisition from willing sellers	?	continue to identify parcels for acquisition and make purchases if opportunities arise	?	continue to identify parcels for acquisition and make purchases if opportunities arise	?	12/31/2011		1500000	0	Not Yet Funded	1500000	Lower Nisqually Mainstem, McAllister Creek Acquisition	11-MAINSTE M-1006
Estuary (River Delta)	Activity Type - Estuarine & Nearshore: Berm or Dike Removal or Modification (200 Acres)	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual	Seeking funding	5000	Funding, Set-up assessment	60,000	Assessment	200000	12/31/2010	Nisqually Indian Tribe	400000	0	Not Yet Funded	400000	I-5 Fill Removal Feasibility Analysis	11-ESTUARY-1004
Riparian, Instream, Rivers/Streams/Shoreline	Floodplain Restoration Site Maintenance - Floodplain Restoration (0.80 Miles) Wood Structures/Barriers # of Structures (25 Each)	Chum, Chinook, Coho, Steelhead	Cutthroat (Secondary Species), Pink (Secondary Species)	Feasibility Completed	Design	100000	Design, Permitting, Funding	150,000	Permitting, Funding, Construction	3,750,000	12/31/2020	Nisqually Indian Tribe	4000000	0	Not Yet Funded	4000000	Lower Nisqually Side-channel project	11-MAINSTE M-1024
Riparian, Instream, Rivers/Streams/Shoreline	Instream Habitat Channel structure - Wood structure / log jam (500 Feet)	Chinook, Steelhead	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species)	Feasibility Completed	Design	50,000	Design, Permitting, Funding	150,000	Permitting, Funding, Construction	1,300,000	12/31/2014	Nisqually Indian Tribe	1500000	0	Not Yet Funded	1500000	Riverbend Logjam Project	11-MAINSTE M-1025
Riparian		Chinook	Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual	acquisition	30000					12/31/2015	Nisqually R Land Trust	30000	30000	NLT	0	Shanzenbach Property Protection	11-MAINSTE M-1028
Estuary (River Delta)	NA	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Monitoring	Monitoring of Fish, Avian, Substrate, Vegetation, Hydrology, Water quality and invertebrate response	200000	Monitoring of Fish, Avian, Substrate, Vegetation, Hydrology, Water quality and invertebrate response	200000	Monitoring of Fish, Avian, Substrate, Vegetation, Hydrology, Water quality and invertebrate response	200000	12/31/2020	US Fish & Wildlife Service, Nisqually Indian Tribe, USGS	600000	450000	EPA, ESRP	150000	Estuary Restoration Project Monitoring	11-ESTUARY-1006
Riparian, Instream, Wetland, Rivers/Streams/Shoreline		Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual	Find funding for conceptual plan	35000	finish conceptual plan, stakeholder outreach	50000	Engineering design	150,000	12/31/2020	Nisqually Indian Tribe	600000	0	Not Yet Funded	600000	Wilcox farm Floodplain Restoration	11-MAINSTE M-1001
Riparian	Activity Type - Riparian Habitat: Plant removal/ control ( Acres), Activity Type - Riparian Habitat: Planting ( Acres), Activity Type - Upland Habitat: Invasives/ weed control ( Acres), Activity Type - Upland Habitat: Planting ( Acres)	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Design Completed	invasive species control: 40 acres; planting: 31 acres; post planting weed control: 45 acres; post planting watering: 5 acres; site prep: 21 acres	50000	invasive species control: 10 acres; planting: 15 acres; post planting weed control: 76 acres; post planting watering: 5 acres	30000	post planting weed control: 90+ acres	15000	12/31/2014	Nisqually R Land Trust	200000	200000	PCCSF, WDFW, USFWS, NRCS-WHIP, Nisqually Tribe-Williams Pipeline Grant, volunteers, NLT	0	Wilcox Flats Nisqually Mainstem and Off-Channel Restoration	11-MAINSTE M-1003
Riparian	Activity Types - Acquisition/Easements/Leases : Streambank or riparian protected ( Miles), Activity Types - Acquisition/Easements/Leases : Wetland areas protected ( Acres)	Chinook	Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual			conservation easement	750000			12/31/2012	Nisqually R Land Trust	750000	0	Not Yet Funded	750000	Wilcox Area Protection Project	11-MAINSTE M-1008
Upland, Riparian, Rivers/Streams/Shoreline		Chinook	Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual					acquisition	200000	12/31/2015	Nisqually R Land Trust	200000	0	Not Yet Funded	200000	Haight Shoreline Protection	11-MAINSTE M-1031
Upland, Riparian, Rivers/Streams/Shoreline		Chinook	Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual					acquisition	500000	12/31/2015	Nisqually R Land Trust	500000	0	Not Yet Funded	500000	Healy Shoreline Protection	11-MAINSTE M-1032
Riparian	Activity Types - Acquisition/Easements/Leases : Streambank or riparian protected ( Miles)	Chinook	Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)		acquisition	100000	acquisition	100000	acquisition	100000	12/31/2020	Nisqually R Land Trust	300000	0	Not Yet Funded	300000	Mainstem Protection Project	11-MAINSTE M-1007
	Fish Passage				Assessment	50,000	assessment	150,000	Assessment	50,000				0	Not Yet Funded	0	Centralia Diversion Dam passage study	11-MAINSTE M-1026

Habitat Type	Activity Type and Project Performance	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status	Year 1 Activity to be funded	Year 1 Estimated Budget	Year 2 Activity to be funded	Year 2 Estimated Budget	Year 3 Activity to be funded	Year 3 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)	Unfunded Need	Project Name	
Riparian	Activity Type - Riparian Habitat: Plant removal/ control (20 Acres), Activity Type - Riparian Habitat: Planting (25 Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual	Identify priority revegetation areas. Landowner outreach.	5,000	Identify priority revegetation areas. Landowner outreach. Develop and implement projects. Invasive species monitoring and control.	50,000	Landowner outreach. Develop and implement projects. Invasive species monitoring and control.	50,000	12/31/2015	Nisqually Indian Tribe	200000		Not Yet Funded	200000	Mainstem Nisqually Riparian Enhancement	11-MAINSTE M-1027
Upland, Riparian, Rivers/Streams/Shoreline	Plant removal/ control ( Acres) Planting ( Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Conceptual	develop management plan	2000	property cleanup, invasive species control	15000	planting, weed control	10000	12/31/2014	Nisqually R Land Trust	30000	0	Not Yet Funded	30000	Yelm - Lower Reach Restoration	11-MAINSTE M-1014
Upland, Riparian, Rivers/Streams/Shoreline	Plant removal/ control ( Acres) Planting ( Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Feasibility Completed	develop management plan	2000	invasive species control	10000	invasive species control, planting	15000	12/31/2016	Nisqually R Land Trust	35000	0	Not Yet Funded	35000	North Yelm Riparian Restoration	11-MAINSTE M-1015
Riparian, Wetland, Rivers/Streams/Shoreline	Activity Type - Riparian Habitat: Planting ( Acres), Activity Type - Riparian Habitat: Plant removal/ control ( Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Feasibility Pending	planting, weed control	6000	weed control	2000	weed control	1500	12/31/2014	Nisqually R Land Trust	75000	12000	NRCS, Volunteers; Additional funding needed	63000	Yelm-McKenna Riparian Restoration	11-MAINSTE M-1016
Riparian, Wetland, Rivers/Streams/Shoreline	Activity Types - Acquisition/Easements/Leases : Wetland areas protected ( Acres), Activity Types - Acquisition/Easements/Leases : Streambank or riparian protected ( Miles), Activity Types - Acquisition/Easements/Leases : Upland protected ( Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual	BLA for property 1	60000	acquisition or conservation easement for property 2 and property 3	100000			12/31/12	Nisqually R Land Trust	210000	170000	SRFB-partial funding	40000	Yelm Shoreline Protection	11-MAINSTE M-1022
Upland, Riparian, Rivers/Streams/Shoreline	Plant removal/ control ( Acres) Planting ( Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Feasibility Completed			invasive species control	1000	planting, weed control	2000	12/31/2014	Nisqually R Land Trust	5000	0	Not Yet Funded	5000	McKenna 94th Ave Riparian Restoration	11-MAINSTE M-1017
Riparian		Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Conceptual	property evaluation	3000	design	25000	permits, implementation	75000	12/31/15	Nisqually R Land Trust	200000	0	Not Yet Funded	200000	Yelm Shoreline Access Project	11-MAINSTE M-1004
Riparian	Activity Types - Acquisition/Easements/Leases : Streambank or riparian protected ( Miles), Activity Types - Acquisition/Easements/Leases : Wetland areas protected ( Acres)	Chinook	Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual			acquisition or conservation easement	1000000			12/31/2013	Nisqually R Land Trust	1000000	0	Not Yet Funded	1000000	McKenna Area Protection Project	11-MAINSTE M-1009
Riparian, Rivers/Streams/Shoreline		Chinook	Chum (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual			acquisition	130000			12/31/2015	Nisqually R Land Trust	130000	0	Not Yet Funded	130000	Malm Shoreline Protection	11-MAINSTE M-1029
Upland, Riparian, Rivers/Streams/Shoreline		Steelhead	Cutthroat (Secondary Species), Coho (Secondary Species)	Conceptual			conservation easement	25000			12/31/2015	Nisqually R Land Trust	25000	0	Not Yet Funded	25000	Brighton Ck Property Protection	11-MAINSTE M-1030
Instream	Instream Habitat	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)		Design	50,000	Design	50,000	Design	35,000	12/31/2010		135000	0	Not Yet Funded	135000	Mainstem Nisqually LWD Assessment and Restoration Plan	11-MAINSTE M-1012
Wetland	Instream Habitat	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)		Design	30,000	Design	30,000	Design	33,000	12/31/2015		93000	0	Not Yet Funded	93000	Nisqually Mainstem Off-Channel Restoration Project Development-Feasibility	11-MAINSTE M-1011
Riparian, Rivers/Streams/Shoreline	Plant removal/ control ( Acres) Planting ( Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Conceptual			invasive species control	15000	planting, weed control	15000	12/31/2016	Nisqually R Land Trust	60000	0	Not Yet Funded	60000	Thurston Ridge Riparian Restoration	11-MAINSTE M-1019
Upland, Riparian	Plant removal/ control ( Acres) Planting ( Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Feasibility Completed	invasive species control; planting	25000	weed control	10000			12/31/2016	Nisqually R Land Trust	35000	35000	Thurston Co Conservation Futures, Additional funding needed	0	South Wilcox Flats Riparian Restoration - Phase II	11-MAINSTE M-1020
Upland	Activity Type - Upland Habitat: Fencing ( Miles), Activity Type - Upland Habitat: Planting ( Acres), Activity Type - Upland Habitat: Invasives/ weed control ( Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Design Completed	planting, weed control	8000	planting, weed control	8000			12/31/2014	Nisqually R Land Trust	20000	16000	NRCS-EQIP, Volunteers, NLT; Additional funding needed	4000	Piessner Upland Forest Restoration	11-MAINSTE M-1021
Riparian	Activity Type - Riparian Habitat: Planting ( Acres), Activity Type - Riparian Habitat: Plant removal/ control ( Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Design Completed	planting, weed control, irrigation	50000	weed control, irrigation	30000	weed control, irrigation	30000	12/31/2014	Nisqually R Land Trust	275000	275000	Nisqually Tribe- Williams Pipeline Grant, SRFB, NLT, Volunteers	0	North Powell Complex Riparian Restoration	11-MAINSTE M-1023
Riparian	Activity Type - Upland Habitat: Planting ( Acres), Activity Type - Upland Habitat: Invasives/ weed control ( Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Design Completed	signage, invasive species control, debris removal	3000	planting, invasive species control	5000	planting, weed control	5000	12/31/2012	Nisqually R Land Trust	20000	3000	NLT, Volunteers, Additional funding needed	17000	Thurston Ridge Boundary Protection	11-MAINSTE M-1018

Habitat Type	Activity Type and Project Performance	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status	Year 1 Activity to be funded	Year 1 Estimated Budget	Year 2 Activity to be funded	Year 2 Estimated Budget	Year 3 Activity to be funded	Year 3 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)	Unfunded Need	Project Name	
Wetland	Activity Type - Fish Passage: Road-crossing removal ( Each), Activity Type - Wetlands: Wetland plant removal / control ( Acres), Activity Type - Riparian Habitat: Planting ( Acres), Activity Type - Upland Habitat: Invasives/ weed control ( Acres), Activity Type - Upland Habitat: Planting ( Acres)	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Steelhead (Secondary Species)	Construction Completed, Land Acquisition Completed	weed control	3000					12/31/11	Nisqually R Land Trust	242000	242000	SRFB, Pacific Salmon Commission, NLT	0	Powell Creek/Nisqually Mainstem Off-Channel Reconnection	11-POWELL-1002
Upland, Riparian, Wetland, Rivers/Streams/Shoreline		Chinook	Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual	acquisition and initial stewardship	205000					12/31/2015	Nisqually R Land Trust	205000	205000	PSAR, Nisqually Tribe	0	Tanwax/Nisqually Confluence Acquisition	11-MAINSTE M-1033
Riparian, Wetland, Rivers/Streams/Shoreline		Chinook	Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual			conservation easement or acquisition	20000			12/31/2015	Nisqually R Land Trust	20000	0	Not Yet Funded	20000	Nisqually-Powell Floodplain Protection	11-MAINSTE M-1034
Nearshore (Beaches)		Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)		NA	0	NA	0	NA	0	12/31/2009		1675000	0		1675000	Nisqually to Pt. Defiance Nearshore Restoration Project	11-NEARSHO RE-1005
Nearshore (Embayments)	Estuarine and Nearshore	Chum, Chinook, Coho, Cutthroat	Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species), Pacific Herring, River Lamprey, Surf Smelt, Sand Lance	Feasibility Completed	Design	100,000	Design	200,000	Design	50,000	12/31/2014	South Puget Sound SEG	350000	0	Not Yet Funded	350000	Sequalitchew Estuarine Restoration Design	11-NEARSHO RE-1006
Nearshore (Embayments)	Estuarine and Nearshore	Chum, Chinook, Coho, Pink	Cutthroat (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species), Pacific Herring, Surf Smelt, Sand Lance, Steller Sea Lion	Feasibility Completed	Design	150,000	Design	150,000	Design	50,000	12/31/14	South Puget Sound SEG	2100000	0	Not Yet Funded	2100000	Chambers Bay Estuarine and Riparian Enhancement, Design	11-NEARSHO RE-1007
Nearshore (Beaches)	Estuarine and Nearshore	Chum, Chinook, Coho, Cutthroat	Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species), Pacific Herring, Surf Smelt, Sand Lance	Feasibility Completed			Design	100,000	Construction	502,300	12/31/2014	South Puget Sound SEG	602300	0	Not Yet Funded	602300	East Nisqually Reach Beach Nourishment Pilot	11-NEARSHO RE-1008
Nearshore (Beaches)	Estuarine and Nearshore	Chum, Chinook, Cutthroat	Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species), Pacific Herring, Surf Smelt, Sand Lance	Feasibility Completed			Design	100,000	Construction	1,400,000	12/31/2014	South Puget Sound SEG	1700000	0	Not Yet Funded	1700000	Chambers Beach Reconstruction and Riparian Enhancement	11-NEARSHO RE-1009

Habitat Type	Activity Type and Project Performance	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status	Year 1 Activity to be funded	Year 1 Estimated Budget	Year 2 Activity to be funded	Year 2 Estimated Budget	Year 3 Activity to be funded	Year 3 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)	Unfunded Need	Project Name	
Nearshore (Embayments)	Estuarine and Nearshore	Chum, Chinook, Cutthroat	Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species), Pacific Herring, Surf Smelt, Sand Lance	Feasibility Completed	Design	130,000	Design	50,000	Construction	6,300,000	12/31/2014	South Puget Sound SEG	6,480,000	0	Not Yet Funded	6480000	Titlow Estuary Restoration	11-NEARSHO RE-1010
Nearshore (Beaches)	Estuarine and Nearshore	Chum, Chinook, Cutthroat	Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species), Pacific Herring, Surf Smelt, Sand Lance	Conceptual	Scoping	10,000	acquisition	300,000	acquisition	3000000	12/31/14		3,310,000	0	Not Yet Funded	3310000	Ketron Island Protection Project	11-NEARSHO RE-1016
Riparian	Activity Type - Riparian Habitat: Plant removal/ control ( Acres), Activity Type - Riparian Habitat: Planting ( Acres), Activity Type - Estuarine & Nearshore: Invasive Species Control ( Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Conceptual	management plan	5000	invasive species control	5000	planting, weed control	7500	12/31/2012	Nisqually R Land Trust	30000	5000	NLT, Additional funding needed	25000	Hogum Bay Riparian Restoration	11-NEARSHO RE-1003
Nearshore (Beaches)	Estuarine and Nearshore	Chum, Chinook, Cutthroat	Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species), Pacific Herring, Surf Smelt, Sand Lance	Feasibility Completed	Design	30,000	Construction	350,000			12/31/2013	South Puget Sound SEG	380,000	0	Not Yet Funded	380000	Filucy Bay Bulkhead Removal	11-NEARSHO RE-1012
Nearshore (Embayments)	Estuarine and Nearshore	Chum, Chinook	Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species), Pacific Herring, Surf Smelt, Sand Lance	Feasibility Pending	Scoping	5,000	Design	40,000	Construction	150,000	12/31/2014	South Puget Sound SEG	195,000	0	Not Yet Funded	195000	East Oro Bay restoration	11-NEARSHO RE-1011
Nearshore (Beaches)	Estuarine and Nearshore	Chum, Chinook, Cutthroat	Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species), Pacific Herring, Surf Smelt, Sand Lance	Feasibility Completed	Design	30,000	Construction	400,000			12/31/2013	South Puget Sound SEG	430,000	0	Not Yet Funded	430000	VonGeldern Cove Bulkhead Removal	11-NEARSHO RE-1014
Nearshore (Beaches)	Estuarine and Nearshore	Chum, Chinook, Cutthroat	Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species), Pacific Herring, Surf Smelt, Sand Lance	Feasibility Completed	Design	120,000	Construction	400,000			12/31/2013	South Puget Sound SEG	520,000	0	Not Yet Funded	520000	Penrose Point Bulkhead Removal	11-NEARSHO RE-1015
Riparian		Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)		acquisition	100000	acquisition	100000	acquisition	100000	12/31/2020	Nisqually R Land Trust	3000000	0	Not Yet Funded	3000000	South Sound Nearshore Protection Project	11-NEARSHO RE-1004
Riparian, Instream, Rivers/Streams/Shoreline	Channel structure - Wood structure / log jam (2,000 Feet)	Chinook, Coho, Steelhead, Rainbow	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), River Lamprey	Feasibility Completed, Design Completed	Revegetation	60,000					6/30/2011	Nisqually Indian Tribe	1400000	140,000	PSAR	0	Mashel Eatonville Restoration Phase II	11-MASHEL-1005
Upland, Riparian, Instream, Rivers/Streams/Shoreline	Instream Habitat	Chinook, Coho, Steelhead	Cutthroat (Secondary Species), Pink (Secondary Species), River Lamprey	Conceptual	Design	50,000	Construction	950,000			12/31/2011		1000000	0	Not Yet Funded	1000000	Mashel Eatonville Restoration Phase III	11-MASHEL-1006
Upland, Riparian, Instream, Rivers/Streams/Shoreline	Activity Types - Acquisition/Easements/Leases : Streambank or riparian protected ( Miles), Activity Types - Acquisition/Easements/Leases : Upland protected ( Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual	acquisition	1350000					12/31/2012	Nisqually R Land Trust	2100000	2100000	Not Yet Funded	0	Mashel Eatonville Reach Protection Initiative	11-MASHEL-1002
Riparian, Instream, Rivers/Streams/Shoreline	Activity Types - Acquisition/Easements/Leases -Streambank or riparian protected ( Miles)	Chinook, Coho, Steelhead	utthroat (Secondary Species), Pink (Secondary Species), River Lamprey	Completed							11/30/10	Nisqually Land Trust	0	0	SRFB	0	Mashel Riparian Habitat Acquisition Project	11-MASHEL-1003

Habitat Type	Activity Type and Project Performance	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status	Year 1 Activity to be funded	Year 1 Estimated Budget	Year 2 Activity to be funded	Year 2 Estimated Budget	Year 3 Activity to be funded	Year 3 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)	Unfunded Need	Project Name	
Upland, Riparian, Wetland, Rivers/Streams/Shoreline		Chinook, Coho, Steelhead, Rainbow	Cutthroat (Secondary Species), Pink (Secondary Species), River Lamprey	Conceptual			management plan	5000	invasive species control, riparian planting	25000	12/31/2015	Nisqually R Land Trust	110000	0	Not Yet Funded	110000	Mashel Eatonville Shoreline Riparian Enhancement	11-MASHEL-1011
Upland, Riparian, Rivers/Streams/Shoreline	Activity Types - Acquisition/Easements/Leases : Streambank or riparian protected ( Miles), Activity Types - Acquisition/Easements/Leases : Upland protected ( Acres)	Chinook, Steelhead	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual	acquisition	1075000					6/1/2012	Nisqually R Land Trust	1075000	1075000	Not Yet Funded	0	Mashel Middle Reach Protection	11-MASHEL-1007
Riparian	Activity Type - Riparian Habitat: Plant removal/ control (25 Acres), Activity Type - Riparian Habitat: Planting (35 Acres)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual	Identify priority revegetation areas. Landowner outreach.	5,000	Identify priority revegetation areas. Landowner outreach. Develop and implement projects. Invasive species monitoring and control.	75,000	Identify priority revegetation areas. Landowner outreach. Develop and implement projects. Invasive species monitoring and control.	75,000	12/31/2015	Nisqually Indian Tribe	250000		Not Yet Funded	250000	Middle Mashel Riparian Enhancement	11-MASHEL-1009
N/A	NA	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)		On-going monitoring	30,000	on-going monitoring	30,000	On-going monitoring	30,000	12/31/2018		190000	30000	Tribe	160000	Mashel Monitoring Plan	11-MASHEL-1004
Instream	Activity Type - Instream Flow Water Flow Returned to Stream ( Acre feet)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual	Receive Funding contract work	20,000	Final report	30,000			12/31/12	Nisqually Indian Tribe	50,000	0			Mashel River Flow Enhancement Investigation	
Wetland	Activity Type - Instream Habitat: Channel reconfiguration and connectivity (5000 Feet)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Design Completed, Permitting Completed, Construction Completed	Riparian plantings		Riparian plantings				12/31/2010	SPSSEG	2700000	2400000	SRFB or PSAR, NRCS	300000	Lower Ohop Valley Restoration - Phase I	11-OHOP-1001
Wetland	Instream Habitat	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)		Final design, Permit and funding application	40,000	Funding and permitting	40,000	Start Construction	2,000,000	12/31/2011		2700000	97550	SRFB or PSAR	2602450	Lower Ohop Valley Restoration - Phase II	11-OHOP-1002
Wetland	Instream Habitat	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)				Revisit Feasibility, Landowner Outreach	50,000	Engineering design	250,000	12/31/2011		3150000	0	SRFB or PSAR	3150000	Lower Ohop Valley Restoration - Phase III	11-OHOP-1003
Wetland	Activity Type - Riparian Habitat: Plant removal/ control ( Acres), Activity Type - Riparian Habitat: Planting ( Acres), Activity Types - Acquisition/Easements/Leases : Wetland areas protected ( Acres), Activity Types - Acquisition/Easements/Leases : Streambank or riparian protected ( Miles)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual	acquisition	1200000					12/31/2011	Nisqually R Land Trust	1200000	0	Not Yet Funded	1200000	Lower Ohop Protection Project	11-OHOP-1004

Habitat Type	Activity Type and Project Performance	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status	Year 1 Activity to be funded	Year 1 Estimated Budget	Year 2 Activity to be funded	Year 2 Estimated Budget	Year 3 Activity to be funded	Year 3 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)	Unfunded Need	Project Name	
Riparian, Instream, Wetland, Rivers/Streams/Shoreline	NA	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)		Monitoring of fish, wildlife, habitat and hydrology	60,000	Monitoring of fish, wildlife, habitat and hydrology	60,000			12/31/2018		190000	0	Not Yet Funded	190000	Ohop Monitoring Plan	11-OHOP-1006
Upland	Activity Type - Upland Habitat: Planting ( Acres), Activity Type - Upland Habitat: Invasives/ weed control ( Acres)			Design Completed	maintenance, debris removal, invasive species control	30000	structure demolition, invasive species control	60000	invasive species control	15000	12/31/2015	Nisqually R Land Trust	120000	30000	Nisqually Tribe, Volunteers; Additional funding needed	90000	Lower Ohop Upland Restoration	11-OHOP-1007
Wetland	Activity Types - Acquisition/Easements/Leases : Streambank or riparian protected ( Miles), Activity Types - Acquisition/Easements/Leases : Wetland areas protected ( Acres)	Steelhead	Cutthroat (Secondary Species), Chinook (Secondary Species), Coho (Secondary Species), Steelhead (Secondary Species)	Conceptual			acquisition	800000			12/31/2012	Nisqually R Land Trust	800000	0	Not Yet Funded	800000	Upper Ohop Valley Protection	11-OHOP-1005
Riparian	Planting 25 Acres, Livestock Exclusion 20 Acres, Plant Removal/Control 20 Acres	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual	Landowner Outreach, Planting Plan Development, Farm Conservation Plan Development	5000	Planting Plan Development, Farm Conservation Plan Development, Prepare Planting Sites: 5 Acres, Exclude Livestock 5 Acres	45,000	Planting Plan Development, Farm Conservation Plan Development, Prepare Planting Sites: 10 Acres, Exclude Livestock 10 Acres	90,000	9/30/2014	Nisqually Indian Tribe	230,000	0	Not Yet Funded	230000	Middle Ohop Revegetation Project	11-OHOP-1008
Riparian, Rivers/Streams/Shoreline		Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Conceptual			conservation easement or acquisition	250000			12/31/2015	Nisqually R Land Trust	250000	0	Not Yet Funded	250000	Middle Ohop Property Protection	11-OHOP-1010
Riparian	Activity Types - Acquisition/Easements/Leases Upland protected ( Acres) Wetland areas protected ( Acres)	Chum	Cutthroat (Secondary Species), Chinook (Secondary Species), Coho (Secondary Species)	Conceptual			conservation easement	500000			12/31/13	Nisqually R Land Trust	500000	0	Not Yet Funded	500000	Forespring Property Protection	11-RSSWASH-1002
Upland, Riparian	Activity Type - Upland Habitat: Invasives/ weed control ( Acres), Activity Type - Upland Habitat: Planting ( Acres), Activity Type - Upland Wetland: Invasives/Weed Control - Upland Wetland ( Acres), Activity Type - Upland Wetland: Wetland Upland - Revegetation Planting ( Acres)	Chum	Cutthroat (Secondary Species), Coho (Secondary Species), Steelhead (Secondary Species)	Design Completed	debris removal, invasive species control, neighbor outreach	30000	invasive species control	5000	planting, weed control	10000	12/31/2014	Nisqually R Land Trust	60000	60000	USFWS, NLT-EMT	0	Red Salmon Creek Headwaters	11-RSSWASH-1003
Riparian		Chum	Cutthroat (Secondary Species), Coho (Secondary Species), Steelhead (Secondary Species)	Conceptual	acquisition	170000					12/31/2015	Nisqually R Land Trust	170000	170000	EMT	0	D.Braget Property Protection	11-RSSWASH-1004
Instream	Fish Passage	Steelhead	Cutthroat (Secondary Species), Chinook (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species)		Design	30,000	Construction	100,000	reporting	2,000	12/31/2010		132000	0	Not Yet Funded	132000	Horn Creek Fish Passage Project	11-HORNHAR-TS-1001

Habitat Type	Activity Type and Project Performance	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status	Year 1 Activity to be funded	Year 1 Estimated Budget	Year 2 Activity to be funded	Year 2 Estimated Budget	Year 3 Activity to be funded	Year 3 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)	Unfunded Need	Project Name	
Instream		Steelhead	Cutthroat (Secondary Species), Chinook (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species)								12/31/2010		294000	0	Not Yet Funded	294000	Harts Lake Loop Road Horn Creek Culvert Replacement Project	11-HORNHAR TS-1002
Riparian	Restore about 2.2 miles of stream reach	Steelhead	Cutthroat (Secondary Species), Chum (Secondary Species)	Conceptual	Scoping	50,000					12/31/14	Pierce County of	1,444,000	Local SWM funds	PSAR, SRFB	1,444,000	Lower Lamas Creek Riparian Restoration	11-MUCK-1001
Riparian	Restore about 2.5 miles of stream reach	Steelhead	Cutthroat (Secondary Species), Chum (Secondary Species)	Conceptual					Scoping	90000	12/31/14	Pierce County of	1880000	Local SWM funds	PSAR, SRFB	1,880,000	North Fork Muck Creek Restoration	11-MUCK-1002
Riparian	Restore .8 miles of stream reach. Restore 1 acre of wetland	Steelhead	Cutthroat (Secondary Species), Chum (Secondary Species)	Conceptual			Scoping	50000	Design	135000	12/31/14	Pierce County of	1010000	Local SWM funds	PSAR, SRFB	1,010,000	South Muck Creek Restoration	11-MUCK-1003
Riparian, Instream, Wetland, Rivers/Streams/Shoreline	Acquire about 60 acres	Steelhead	Cutthroat (Secondary Species), Chum (Secondary Species)	Conceptual			Scoping	300000	Scoping	300000	12/31/14	Pierce County of	1041000	Local SWM funds	PSAR, SRFB	1,041,000	Muck Creek Basin Floodplain Acquisition	11-MUCK-1004
Instream		Steelhead	Cutthroat (Secondary Species), Coho (Secondary Species)				Design, Permitting, Funding	100000	Construction	720000	12/31/2010	Pierce County of	820000	0	Not Yet Funded	820000	Brighton Creek Culvert Replacement Project	11-BRIGHTON-1001
Instream, Wetlands	Fish Passage	Coho, Cutthroat,	Chinook, Steelhead,	Feasibility Pending	Design	50,000	Construction	100000			12/31/2012	South Puget Sound SEG	150000	0	Not Yet Funded	150,000		11-MCKENNA-1001
Instream	Fish Passage	Coho, Cutthroat, steelhead	Chinook, Chum, Pinks	Feasibility Pending							12/31/2015	Thurston Co.	550,000				Toboton @ Peissner Rd culvert replacement	11-TOBOTON-1001
Riparian, Instream, Wetland, Rivers/Streams/Shoreline	Fish Passage	Coho	Cutthroat (Secondary Species), Chinook (Secondary Species), Chum (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Completed	Construction	240,000					12/31/2011	South Puget Sound SEG	300000	25000	NFWF	275000	Powell Creek Watershed Restoration	11-POWELL-1004
Riparian	Riparian Habitat Planting (10 Acres)	Coho	Cutthroat (Secondary Species), Chinook (Secondary Species), Steelhead (Secondary Species)		Riparian plantings (3-5 acres)	32,000	Riparian plantings (3-5 acres)	32,000	Riparian plantings (3-5 acres)	32,000	12/31/2018	Nisqually Indian Tribe	96000	0	Not Yet Funded	96000	Tanwax Creek Riparian Restoration	11-TANWAX-1001
Riparian	Planting: 150 Acres, Plant Removal/Control: 100 Acres	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Feasibility Completed	Identify priority revegetation areas. Landowner outreach. Develop and implement projects. Invasive species monitoring and control.	90,000	Identify priority revegetation areas. Landowner outreach. Develop and implement projects. Invasive species monitoring and control.	90,000	Identify priority revegetation areas. Landowner outreach. Develop and implement projects. Invasive species monitoring and control.	90,000	12/31/2020	Nisqually Indian Tribe	1075790.63	40000	Nisqually Indian Tribe. Other sources to be determined.	1035790.63	Nisqually Vegetation Management	11-MISC-1001
Riparian		Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Conceptual	Inventory Farms. Landowner outreach. Develop farm plans and assist in implementation wherever possible via technical assistance and cost share funding (PCD 120K, TCD 75K)	195000	Inventory Farms. Landowner outreach. Develop farm plans and assist in implementation wherever possible via technical assistance and cost share funding (PCD 120K, TCD 75K)	195000	Inventory Farms. Landowner outreach. Develop farm plans and assist in implementation wherever possible via technical assistance and cost share funding (PCD 120K, TCD 75K)	195000	12/31/2020		680000	65000	not Yet Funded	615000	Nisqually Basin Farm Planning	11-MISC-1002
Instream	Nutrient enrichment - carcass placement	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)		distribution of 30,000 lbs. of salmon nutrients	30,000	distribution of 30,000 lbs. of salmon nutrients	30,000	distribution of 30,000 lbs. of salmon nutrients	30,000	12/31/2020	Nisqually Indian Tribe	90000	15000	Nisqually Indian Tribe	75000	Salmon Carcass Nutrient Enhancement	11-MISC-1004
N/A	NA	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2009	Thurston County	280000	0	General Funds (County)	280000	Thurston County CAO Revision	11-MISC-1010
N/A	NA	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2011	Thurston County	444000	0	General Funds (County)	444000	Thurston County Shoreline Master Program Revision	11-MISC-1011

Habitat Type	Activity Type and Project Performance	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status	Year 1 Activity to be funded	Year 1 Estimated Budget	Year 2 Activity to be funded	Year 2 Estimated Budget	Year 3 Activity to be funded	Year 3 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)	Unfunded Need	Project Name	
N/A	NA	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2020	Pierce County of	0	0	General Funds (County)	0	Pierce County Shoreline Master Program Revision	11-MISC-1012
Riparian	NA	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2020	Nisqually Indian Tribe	298353.66	100000	TFW	198353.66	Forest and Fish Prescription Implementation Monitoring/Tech. Assistance	11-MISC-1013
Instream	NA	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2010	USFWS / WA DNR	220675	0	Not Yet Funded	220675	DNR Aquatic HCP Planning	11-MISC-1009
Riparian	Activity Type - Riparian Habitat - Plant removal/ control	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)		Search and destroy of japanese knotweed	100,000	Search and destroy of japanese knotweed	100,000	Search and destroy of japanese knotweed	100,000	12/31/2012	Pierce Conservation District	300000	44000	SRFB, Community Salmon Fund	256000	Japanese Knotweed Eradication	11-MISC-1003
Riparian	NA	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)		stewardship activities	58125	stewardship activities	58125	stewardship activities	58125	12/31/2020	Nisqually R Land Trust	187500	9000	NLT, Volunteers, Additional funding needed	178500	Nisqually Land Trust Property Stewardship	11-MISC-1007
Estuary (River Delta)	Habitat Protection (3000 ac)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Conceptual	Support of 0.5 FTE wildlife enforcement officer	34200	Support of 0.5 FTE wildlife enforcement officer	34200	Support of 0.5 FTE wildlife enforcement officer	34200	12/31/2020	US Fish & Wildlife Service	151500	0	Not Yet Funded	151500	Protection Enforcement on Nisqually Wildlife Refuge (Obj. 1.2)	11-ESTUARY-1005
Upland		Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)		Assessment	15000	assessment	15000			12/31/2013	Nisqually R Land Trust	40000	20000	partially funded-National Park Service	20000	Community Forest Initiative	11-MISC-1017
	Water Quality	Chinook, Coho, Steelhead, Rainbow	Cutthroat (Secondary Species), Pink (Secondary Species), River Lamprey	Active	Design/Construction	50000	Design/Construction	50000	Design/Construction	50000	12/31/2012	Stewardship Partners / Town of Eatonville	150000	50000	Community Salmon Fund, Nisqually Tribe Charitable Fund,	100000	Eatonville Stormwater Reduction Project	11-OHOP-1009
	Water Quality	Chinook, Coho, Steelhead, Rainbow	Cutthroat (Secondary Species), Pink (Secondary Species), River Lamprey	Active	Data gathering/planning	100000	planning	40000			6/30/12	Stewardship Partners / Town of Eatonville	140000	140000	Funded - EPA Tribal Assistance, Town of Eatonville local funds	0	Eatonville Stormwater Planning	11-OHOP-1011
	Activity Type - Upland Habitat; Water development	Chinook, Coho, Steelhead, Rainbow	Cutthroat (Secondary Species), Pink (Secondary Species), River Lamprey	Conceptual	Design	50000	Construction	400000			12/31/2012	Stewardship Partners / Town of Eatonville	450000	0	Not Yet Funded	450000	Street Edge Alternative (SEA) Street	11-MISC-1018
Riparian	Activity Types - Acquisition/Easements/Leases : Streambank or riparian protected ( Miles)	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Steelhead (Secondary Species)	Conceptual	acquisition	150000	acquisition	150000	acquisition	150000	12/31/2020	Nisqually R Land Trust	470000	0	Not Yet Funded	470000	Upper Watershed Small Properties Protection	11-MISC-1006
	Outreach and Education				School children involvement	95000	School children involvement	95000	School children involvement	95000	12/31/2020	Nisqually Foundation / NREP	285,000	50000	EPA	235000	Nisqually River Education Project	11-OUTREAC H-1001
	Outreach and Education				Public Outreach, Education, Volunteer Recruitment, Training, Tours, Salmon Habitat Restoration Activities	70000	Public Outreach, Education, Volunteer Recruitment, Training, Tours, Salmon Habitat Restoration Activities	70000	Public Outreach, Education, Volunteer Recruitment, Training, Tours, Salmon Habitat Restoration Activities	70000			210,000	70000	Tribe	140000	Nisqually Stream Stewards	11-OUTREAC H-1003
	Outreach and Education				Certification evaluations, marketing and promotions	15,000	Certification evaluations, marketing and promotions	15,000	Certification evaluations, marketing and promotions	15,000			45,000	0	Not Yet Funded	45000	Salmon-Safe Certification Program	11-OUTREAC H-1004
	Outreach and Education				Manufacturer and Public Outreach, Education, and Tours	23,897	Manufacturer and Public Outreach, Education, and Tours	19,297	Manufacturer and Public Outreach, Education, and Tours	18,457				0	Not Yet Funded	0	FSC Market Development	11-OUTREAC H-1005
	Outreach and Education				Forest Landowner Outreach and Certification	51,384	Forest Landowner Outreach and Certification	19,297	Forest Landowner Outreach and Certification	18,457				0	Not Yet Funded	0	Forest Landowner Certification Program	11-OUTREAC H-1006
	Outreach and Education				Carbon Recruitment and Offset Sales, Water Quality Trading Framework Development	53,897	Recruitment and Offset Sales, Water Quality Trading Modeling and Feasibility Study, Funding Source Development	44,297	Recruitment and Offset Sales, Water Quality Trading Modeling and Funding Source Development	43,457				0	Not Yet Funded	0	Ecosystem Services Market Development	11-OUTREAC H-1007

Habitat Type	Activity Type and Project Performance	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status	Year 1 Activity to be funded	Year 1 Estimated Budget	Year 2 Activity to be funded	Year 2 Estimated Budget	Year 3 Activity to be funded	Year 3 Estimated Budget	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)	Unfunded Need	Project Name	
N/A	NA	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)		On-going monitoring	85,000	On-going monitoring	85,000	On-going monitoring	85,000	12/31/2020	Nisqually Indian Tribe	468240	0	Not Yet Funded	468240	Nisqually Chinook Recovery Habitat Monitoring	11-MISC-1014