Nisqually Watershed Chinook Salmon Recovery Plan
3-year Work Program Update 2008-2010

Introduction

Because major pieces of the three year work program have not yet been implemented since the development of the 2007-2009 work program this list is not significantly different than last year's. There are some changes in the habitat projects that reflect some newly developed opportunities but the big key projects remain substantially the same.

The Nisqually Watershed is poised to make large measurable progress in Habitat, Hatchery and Harvest actions that will lead to significant improvements in the viability of the Nisqually Fall Chinook Salmon population. **This proposed three year work program contains habitat projects that could result in the doubling of the number of naturally produced Chinook that return to the watershed and increase the life history diversity of the population from its current 80 % of historic diversity to 93 % of its historic diversity.** In addition we have identified harvest and hatchery actions we can take to increase the number of natural origin spawners and decrease the number of hatchery origin spawners on the spawning grounds.

Implementation of the Nisqually Chinook Recovery Plan has been ongoing since the completion of the plan in 2001. Much of the last five 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 already have seventy percent of the mainstem Nisqually that is used by salmon under protective ownership. The first two major habitat restoration projects are scheduled for construction this summer: restoring 100 acres of estuary habitat and 1.5 miles of instream habitat on the Mashel River. **The additional projects proposed in this work program will increase protective ownership of habitat by another 3.5 miles, and will substantially implement the major habitat restoration work identified in 3 out of the 5 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 harvest rate on Nisqually Chinook (including ocean, Puget Sound and in-river fisheries) must be reduced. We also must reduce the proportion of hatchery origin fish that stray and spawn with natural origin fish. This work program contains projects and programs that will allow us take those actions.

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 five years to allow those actions to take place. The only limiting factor in the implementation of our

plan is securing the necessary resources to implement the actions we are including in this work program.

LONG TERM GOALS FOR NISQUALLY RIVER FALL CHINOOK

1) Assure natural production of fall Chinook in perpetuity by providing high quality, functioning habitat and by promoting the development of locally adapted, functioning populations.
2) Assure sustainable harvest opportunities.
3) Provide significant contributions to the recovery of other threatened or endangered species.
4) Secure and enhance natural production of all salmonids.
5) Assure that the economic, cultural, social, and aesthetic benefits derived from the Nisqually ecosystem will be sustained in perpetuity.

SPECIFIC 10 YEAR OBJECTIVES

Stock objective:

Manage for a natural escapement of a minimum of 1200 natural origin recruits with no more than 30% contribution from hatchery origin recruits over the next 10 years and a terminal harvest of 10,000 – 15,000 if consistent with escapement objective.

Habitat objective:

Implement habitat projects over the next 10 years that will result in an increase in the productivity and capacity of the watershed from its current estimated values of 3.7 and 4960 to 5.3 and 8600 and an increase in life history diversity of the stock from 80% to 93%.

- Protection objective: No further degradation in the Nisqually watershed's and Puget Sound's ability to support the productivity, capacity, and life history diversity of natural origin Nisqually Fall Chinook.
- Restoration objective: Restore the Nisqually watershed and Puget Sound nearshore habitat's ability to support a natural origin Nisqually Fall Chinook productivity of 5.3, a capacity of 8600, and an increased life history diversity to 93%.

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 WORKPLAN IMPLEMENTATION EXPECTATIONS

Stock objective progress:

- Reduce combined pre-terminal and terminal harvest exploitation rate from current rate of 0.76 closer to current estimated MSY of 0.47 with an annual terminal harvest of 10,000 fall Chinook.
- Reduce hatchery origin recruits contribution to less than 30% of total spawning population (only **after** harvest rate has been reduced to MSY).

- Implementation of habitat objectives that result in habitat's ability to support an increased productivity, capacity and life history diversity.

Habitat objective progress:

Projects implemented that, **as they mature and as the stock has time to respond**, will increase the ability of the habitat to support a Nisqually fall Chinook productivity and capacity from its current estimated values of 3.7 and 4961 to 5.3 and 8600 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.

THREE YEAR WORKPROGRAM SUMMARY

In order to achieve the long-term goal of a sustainable population of locally adapted Nisqually Fall Chinook we must further reduce the total harvest exploitation rate, limit the straying of hatchery fish into natural spawner areas, and restore the ability of the Nisqually watershed to support greater productivity, capacity and life history diversity. We believe we can make significant progress in these three areas in the next three years by implementing the proposed 3 year Nisqually work program. The following sections summarize the proposed elements of the 3 year work program.

Stock objective progress:

Harvest: Continued support for co-manager harvest negotiations at the state, interstate, and international levels to work towards a reduction in the overall exploitation rate of Nisqually fall Chinook. Continued support for the capacity necessary to manage tribal and non-tribal fisheries to ensure negotiated harvest rates and escapement goals are met.

Hatchery: Support for the current hatchery programs to continue to produce fish that support the terminal harvest objectives. Support for the hatchery to manage the program consistent with their hatchery genetic management plans. Funding for the development, construction and operation of a seasonal weir on the Nisqually River that will allow the physical separation of hatchery and natural origin fish to reduce hatchery origin fish straying to the spawning grounds.

Habitat:

The following habitat actions, if implemented, will result in substantial increases to the productivity, capacity and life history diversity of Nisqually Chinook salmon, as the habitat projects mature and as the stock has time to respond. The below table outlines the currently modeled condition of the population and then the predicted eventual changes in those parameters after the habitat actions are completed:

Scenario	***Diversity Index***	***Productivity***	***Capacity***
Current condition	80 %	3.7	4961
After 3 yr work program	93 %	5.3	8604

Protection:

- Increase permanent protection through acquisition of anadromous habitat:
    - Mainstem Nisqually: 1.5 miles and 150 acres
    - Ohop Creek: 1 mile and 100 acres
    - Mashel River: 1 mile and 40 acres
    - Lower Nisqually mainstem and McAllister creek: 200 acres
    - South Puget Sound shoreline: 100 acres
- Support ongoing protection and stewardship of public and land trust properties
- Update and strengthen local regulatory protection:
    - Thurston County Critical Area Ordinance revision
    - Thurston County Shoreline Master Program revision
- Ensure Forest and Fish Agreement is implemented effectively in critical headwater forestry areas.

Restoration:

Nisqually Estuary:

Restore 700 acres of estuary west of mainstem,
removal of last dike on Nisqually Tribe property, eastern side Red Salmon Slough

South Puget Sound nearshore (Nisqually Estuary – Point Defiance):

Identify priority projects and implement at least one project

Mashel River Eatonville Reach:

Restore instream diversity: 1.5 miles
Restore off-channel wetlands: 5-10 acres
Restore/enhance riparian vegetation: 50 acres

Lower Ohop Creek:

Restore 6.3 miles of instream habitat
Restore 800 acres of Lower Ohop Valley floor wetlands
Revegetate 150 acres of riparian habitat and 800 acres of wetlands

Nisqually Mainstem:

Restore access to 15 acres of off-channel wetlands at Powell Creek mouth
Restore access to and quality of 30 acres of high priority off-channel wetlands (25 acres McKenna Reach)
Revegetate channel migration zone: 3 river miles

Targeted watershed wide programs:

Salmon carcass nutrient enhancement:

Distribute 34000 pounds of salmon carcasses annually to key juvenile rearing areas in the Nisqually mainstem and Mashel River.

Invasive species prevention and control:

Develop a cooperative Nisqually watershed invasive species task force to develop and implement an invasive species control plan (plants and animals).

Habitat Project development:

Lower Nisqually Reach restoration opportunities assessment
I-5 fill removal feasibility analysis
Mainstem off-channel habitat project development
Riparian vegetation assessment/project development
Large Woody Debris enhancement in mainstem Nisqually

Adaptive Management:

Develop and implement comprehensive database to track salmon recovery plan, implementation and progress.
Refine and further define adaptive management plan for Nisqually watershed
Implement elements of adaptive management plan, including collection of key data to measure progress and inform decision makers.

Watershed Capacity:

In the Nisqually we have spent the last few years laying the groundwork for implementation of high priority actions in our salmon recovery plan. We are now in a position where we are ready to make significant progress. We have watershed and landowner commitments to do the projects necessary to implement significant portions of our plan. Our primary capacity issue is funding: to implement projects that are ready to go, and to have the necessary people to get all the necessary coordinating tasks completed.

Currently our capacity is organized as follows:

The Nisqually Tribe is the lead for salmon recovery planning and coordination in the watershed. Currently the Tribe has the following positions that assist in the Salmon Recovery Program:

- Program Manager - ensuring recovery plan development and implementation is staying on track and coordinating the lead entity process.
- Habitat Restoration Biologist - develop and implement specific habitat restoration projects.
- Research Biologist - maintains and updates our EDT databases, conducts monitoring, and investigates key uncertainties.
- GIS/Data Manager – organizes salmon recovery data and assists in providing information for implementation and monitoring
- Outreach and Education Coordinator- educates and coordinates volunteers in salmon habitat projects.
- Technician - assists both in restoration projects and in research projects.

In addition the Tribe has positions that manage the harvest and hatchery programs.

The South Puget Sound Salmon Enhancement Group has two FTE project managers that are helping to manage key habitat projects in the Nisqually Plan. One is focused on freshwater projects and the other is focused on nearshore projects.

The Pierce Conservation District has one farm planner that covers both the Nisqually and Puyallup/Clover-Chambers watersheds.
The Thurston Conservation District has one farm planner that is currently only funded to work on the most downstream portion of the Nisqually watershed.

The Nisqually Land Trust has a volunteer board president that develops and implements most of the high priority salmon habitat protection projects. There is a part –time Executive Director that assists the president in acquisition projects as well as management of the organization. There is one part-time stewardship coordinator that is working to ensure currently owned properties are protected and restored.

There is a need to maintain existing staff and to add new staff if we are to successfully implement all the identified elements in our three year work program. Currently funding for existing staff is not yet fully identified for this three year period.

If funding for existing staff can be secured we have also identified new positions that would significantly help to increase capacity:

Restoration:
Need new positions –
1 FTE Riparian Vegetation Manager
3 FTE Vegetation Technicians
1 FTE instream project manager
2 FTE farm planners
Our current Salmon Recovery Restoration Biologist is attempting to simultaneously develop and coordinate with our project partners multiple in-stream and estuary restoration projects as well as numerous revegetation projects. There is a need for an additional FTE that would focus solely on native plant revegetation and invasive plant

control. In addition there is an immediate need for a planting and maintenance crew (minimum 3 FTE technicians) that can accelerate the rate of revegetation of key riparian and wetland areas and ensure their success through summer/fall maintenance work. Because of the scale of some of the upcoming instream and estuary restoration projects it may be necessary to have an additional FTE project manager to ensure each project gets the full attention it requires.
There are a number of high priority farm areas in both the Pierce and Thurston County parts of the watershed that do not yet have best management practice farm plans developed and implemented. Neither Conservation District currently has the funds necessary to dedicate one FTE specifically to high priority Nisqually salmon recovery area farms.

Protection:
The Nisqually Land Trust is primarily limited right now by funds to support the organization and staff time to implement projects and coordinate stewardship. If funding was available to expand the capacity of the Land Trust their pace of project implementation would accelerate. The Land Trust is also in need of support to effectively manage properties for continued protection that are already in its ownership.

Adaptive Management/Plan Implementation:

There is a need for 2 FTE's. One position would focus on development and refinement of the Nisqually adaptive management plan, coordinate the collection of key monitoring data identified in the plan, coordinate and implement the development of a system to track and report key monitoring data and plan actions. A second position would be a technical person who would assist in the development and maintenance of a database that would track the progress of salmon recovery plan implementation in Nisqually and that would roll up into a regional system to track salmon recovery actions.

In addition to these positions there are others included in the work program that would be key to helping us accomplish specific plan actions.

3 YEAR WORKPROGRAM PROJECT LIST:

CAPITAL PROJECTS:

Hatchery:

Seasonal weir to reduce hatchery fish straying – design, installation, and operation of weir used during Chinook spawning season to reduce hatchery straying upstream of the two hatcheries. Project is essential if we are to meet our objective of reducing hatchery proportion of Chinook on the spawning grounds to less than 30 %. Sequencing note: project operation cannot begin until harvest rates are reduced to MSY.

Habitat:

– Protection:

Acquisition of high quality habitat or areas that are priority for restoration is a primary protection strategy in the Nisqually plan. Acquisition is considered a protection strategy with greater long term certainty than regulatory protections. This is because regulations can change with new political pressures, there are very little resources for enforcement of protective regulations, and when regulation violations include the unauthorized removal of large trees in the riparian corridor no enforcement action can replace that habitat loss over a short time period. The below projects make considerable progress in implementing the habitat protection objective of no further loss of the ability of the habitat to support the productivity, capacity and life history diversity of the population.

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. Some specific parcels are already targeted.

Acquire 1 mile Mashel shoreline – project would focus on the Eatonville reach of the Mashel to protect and make available for restoration. Specific parcels and acreage have been identified.

Acquire 1 mile Ohop creek, 100 acres – This would acquire a key property for the Ohop Valley restoration project and ensure the long-term stewardship of the site for salmon and other wildlife habitat.

Acquire intact South Puget Sound nearshore habitat – Protection of nearshore has been identified as a high priority but no specific sites have yet been identified. This cost estimate is more preliminary.

Lower Nisqually mainstem, McAllister Creek acquisition (200 acres) – 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.

Acquire 80 acres along Mashel River

Acquisition of a critical parcel including shore line and the adjacent uplands.

Acquire easement over 249 acres of Nisqually mainstem, off channel creek and large wetland
Acquisition of a conservation easement over a large property near the most rapidly urbanizing area along the mainstem of the river. The wetland and stream are critical off channel habitat for juvenile salmonids.

Protection enforcement on NLT properties (stop ATV damage, dumping & vandalism)
Build fences, gates and other deterrents on NLT properties adjacent to developed properties where there are current problems. These projects affect at least 5 miles of river front and several off channel streams and wetlands which provide spawning and juvenile salmonid habitat.

– Restoration:
Nisqually Refuge Estuary Restoration 700 acres Objective in Nisqually Wildlife Refuge Comprehensive Conservation Plan. This is the single most important habitat project in the Nisqually salmon recovery plan. It will remove much of the outer dike and allow the natural regeneration of estuary habitat and tidal channels on 700 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. Costs for the project include a .5 FTE Restoration Ecologist to develop and manage the project, .5 FTE Biological Technician to monitor and manage invasive species in the project, contracted design/engineering work, project construction, and post-construction site management for any potential adjustments that are necessary. The cost estimates for construction are ***very rough*** at this point and may change with geotechnical studies that are being completed in the coming months as designs are refined. Additional project element: Develop a riparian restoration project for the riparian area in the NWR to include planting a variety of native riparian trees and shrub species and restoring natural hydrology on 38 acres of currently diked habitat on the Refuge. This may include constructing a bench that would mimic natural sediment deposition bars along the Nisqually River to reduce frequency of tidal inundation and promote sediment deposition.

Red Salmon Slough Estuary Restoration Phase III – Removal of last remaining dike on Nisqually Tribe's estuary property 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. Cost estimate is preliminary.

Red Salmon Creek/Wash Creek restoration phases II and III – Restore 1,600 feet fronting salt marsh along Red Salmon Creek upstream of railroad crossing. Red Salmon Creek is a small tributary to the Nisqually delta on the east side. Restore 1/4 mile of riparian zone and 8-10 acres of upland. Control exotics and plant in Wash Creek (tributary to Red Salmon Creek) riparian zone 200 feet fronting salt marsh and ¼ mile of salmon-bearing stream immediately upstream.

Scott estuary/nearshore restoration – The Nisqually Land Trust owns a small pocket estuary just west of the Nisqually Estuary. They are seeking funds to develop a restoration plan for the property and begin implementation ($30,000); 200 feet of saltwater lagoon frontage and 20 acres of uplands draining into the lagoon.

Nisqually -Pt.Defiance nearshore restoration project - This project will assess 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 2009 would be the implementation of one of these projects. Because the assessment is still in its early stages the cost estimate for project construction is quite rough at this point.

Lower Ohop Valley restoration - channel reconstruction and valley floor revegetation
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 18 landowners in the project reach are all supportive of this option. Phase I of this 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. Phase II of the project will revegetate 800 acres of the surrounding valley floor which is dominated by wetlands. Phase II will likely continue beyond the three year work program.

Mashel Eatonville Reach in-stream Restoration Phase II
The SPSSEG and the Tribe are constructing Phase I of the Mashel Eatonville Reach instream restoration project this summer (2006). Phase I will restore in stream diversity and riparian function in approximately half of the degraded areas in this reach. An assessment of habitat needs and potential projects completed in 2004 identified other projects within the reach that could not be addressed because of unwilling landowners or lack of funds. Phase II would move forward in addressing the remaining in-stream habitat issues in this reach. Changes in landownership and new relationships with landowners have resulted in new opportunities to implement proposed projects. This project would conduct some additional landowner outreach, then complete project designs and permitting. The project could be ready for construction by 2009. Completion of Phase I and Phase II of this project combined with the planned riparian revegetation work would substantially address all major habitat issues within this reach that can be addressed.

Nisqually River mainstem off-channel restoration - multiple potential projects
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 design and implement key projects. Project construction cost estimates are quite rough because the specific project site and design has not yet been determined.

Nisqually River mainstem Powell Creek wetland off-channel restoration
This project would restore access for juvenile salmon to half of the largest off-channel wetland complex on the mainstem river. Currently a series of culverts along a former logging haul road are a partial barrier for juvenile passage. There is also an old bridge abutment along the mainstem of the river where the haul road used to cross the river. This project would remove the culverts and bridge abutment.

Wilcox Flats Nisqually River mainstem and off channel restoration
Restoration of Wilcox Flats (mostly owned by Nisqually Land Trust), primarily through revegetation projects, between river mile 28 and 29.5: ¾ mile of riverfront, at least 1 to 1 ½ miles of side channels, riparian zones and uplands totaling 170 acres; In addition the adjacent Wilcox farm is participating in restoration projects (mostly revegetation work) on their property, both along the Nisqually mainstem and along lower Horn Creek as it empties out into the mainstem.

Wilcox Nisqually side-channel enhancement
The project would create an artificial side channel of the Nisqually River that would by-pass the Centralia diversion canal and increase the off-channel rearing and spawning habitat on Wilcox Farms.

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 invasive plants that threaten ecosystem processes and habitat need to be controlled. A plan needs to be developed and implemented that prioritizes risk and outlines control measures. This will pay for a 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 manage invasive plants in the watershed. It will also pay for the plants and supplies needed to implement the projects. The crew in particular is key to our long term success with vegetation projects. Without proper maintenance many revegetation projects will fail.

Red Salmon Creek/Washburn Creek restoration phases II, III, IV and V
Weed control on 30 acre property and replanting at least 8 acres between 2 chum spawning streams immediately upstream of NIT dike removal area along Red Salmon Slough.

Nisqually River mainstem Powell Creek wetland off channel restoration maintenance
Maintenance of 2007 project area which restored the road bed within the river's flood plain, removed a bridge abutment along the mainstem river and removed 3 culverts on Powell Creek.

Hahn property restoration
200 feet of river front across from Wilcox Flats, owned by NLT. Remove ivy and blackberry infestations and replant with native trees and shrubs.

Browder/Barlett/Kist revegetation
Complete revegetation of about 25 acres of channel migration zone on three adjacent properties along ½ mile of the Nisqually River. 5.7 acres were replanted in 2007.

Mashel Eatonville Reach riparian revegetation

There are already a series of planting projects along the Mashel River near Eatonville that are underway this year (2006). However, there are many more potential sites left that could be planted over the next three years. This project would address the long-term process need of the river for mature conifers – for shade and as a large woody debris source for the river.

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 ($25,400 starting annual cost), to conduct the monitoring program and guide treatment efforts as well as some time for an 0.5 FTE Biological Technician, GS-5/6/7 ($20,500 starting annual cost), to assist in monitoring the establishment of invasive species and implementing control measures as necessary.

Farm Planning focused on high priority salmon reaches
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.

Salmon carcass nutrient enhancement
The Nisqually Tribe has managed a project to return salmon carcasses to the watershed from the Tribe's 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

Steilacoom-Sequalitchew Reach Hydraulic Study and Restoration
Still needs description.

Nisqually Pines Culvert Replacement
The goal of this project is to replace a fish passage barrier culvert that is located on a recreational trail in the Nisqually Pines housing development. Replacing this culvert with a footbridge will reestablish access to a small, spring fed tributary and provide critical over-wintering habitat for juvenile salmonids. Funding applied for: Nisqually Community Salmon Funds ($16,500). Match funds already received: South Sound Fly Fishers ($7,000). In-kind match pledged: DOT plants ($626), volunteers ($627)

Tanwax Three Culvert Replacement
These culverts have been identified as potential barriers. A site visit needs to be scheduled with landowners to review the culverts to determine if they all need to be replaced or some portion of them. No designs or estimates completed. Might qualify for FFFPP.

Horn Creek Two Culvert Replacement
Need to contact landowners and find out status of their replacement plans. Might qualify for FFFPP; if they are replacing summer 2007, input in design would be great.

NON-CAPITAL NEEDS

Harvest Management Reform Support
Renegotiation of pre-terminal harvest rates
Recent review of the combined harvest exploitation rate on Nisqually Chinook indicates that it is currently higher than the modeled MSY rate for the stock. Considerable staff time will need to be spent negotiating both within the region as well as outside the region in order to achieve a lower exploitation rate that is more consistent with the stock's MSY. It is important that this task is completed before the operation of the seasonal weir proposed in the hatchery section commences. If not we would not be able to operate the weir because there would not be enough returning natural origin fish to support the continued viability of the stock on their own.

Future Habitat Project Development

Lower Nisqually Reach restoration assessment
The Lower Nisqually Reach of the Nisqually River is one of the highest priority reaches of the mainstem for restoration. It has had significant bank hardening, loss of access to off-channel wetlands, and loss of riparian vegetation. In addition it is used by 95 % of the salmon in the Nisqually because it is the last reach of the river before the estuary. This project proposes to assess this 3.6 mile reach and to identify potential habitat restoration projects. A restoration plan, which will include various alternatives, will be presented to the landowners and other user groups along the reach. Through this outreach process an alternative or a comprehensive selection of projects will be identified and an engineer will then draft a preliminary design (30% complete) with which additional funding for implementation can be sought.

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.

Mainstem Nisqually LWD assessment and project identification
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 30% engineering designs.

Habitat Capacity Support

protection support

Protection enforcement on Nisqually National 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)

NLT property stewardship/ongoing protection costs
By the end of 2006 the Land Trust will own approximately 1250 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.
Based on definitions and calculations devised by the Washington Department of Natural Resources, the Land Trust Alliance, and the Cascade Land Conservancy, NLT estimates annual stewardship and management costs for properties as follows:

1. Legal Stewardship: In general, this baseline of responsibilities includes the objectives and strategies necessary to protect properties from incursion and misuse; it includes health and safety risk-abatement. At $25/acre, the Land Trust's annual estimated cost is $31,250.
2. Ecological Stewardship: This is the next level of stewardship and requires managing properties to achieve optimal biodiversity for a given ecotype. At $6.25/acre, the Land Trust's annual estimated cost is $7,812.
3. Organizational Overhead: Also calculated at a rate of $6.25/acre, the estimated annual cost is $7,812.

In total, then, the annual stewardship costs will be approximately $46,875, or about $140,625 for the 2007-2009 period. Currently, NLT has a small endowment that will generate approximately $3,000 per year for stewardship. In addition for general support of outreach and education associated with stewardship needs NLT estimates it needs an additional $10,000/yr to support that work.

Thurston County CAO revision 2006, 2007
Thurston County staff time to do required updates to Thurston County's Critical Area Ordinance.

Thurston County Shoreline Master Program revision 2007-2009
Thurston County staff time to do required updates to the county's Shoreline Master Program.

Forest and Fish/watershed analysis prescription implementation monitoring/technical 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.

tracking DNR Aquatic HCP and potential Nisqually impacts
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.

NLT administrative/facilities support
The Nisqually Land Trust incurs annual administrative costs for owning and general management of properties. Costs include: Administrative support ($10,000/yr.), GIS/data management (10,000/yr.), office truck ($30,000 initial cost, $2000/yr.

Maintenance) Administrative support includes staffing, office space, insurance, property fees, etc.

restoration support

In-stream, off-channel, and estuary habitat project Restoration Biologist
This 1 FTE works to ensure that priority habitat projects throughout the watershed are developed and implemented consistent with the Nisqually salmon recovery plan. This position is key to ensuring that high priority habitat projects in the plan stay on track. Position includes cost of 1 FTE plus Nisqually Tribe 54% indirect rate.

Project Technician
Assists in implementation of restoration projects, field work. .05 FTE plus Nisqually Tribe 54% indirect rate.

Nisqually Watershed Stewardship Plan Implementation

Nisqually River Council support
This would support the continued facilitation of the Nisqually River Council and implementation of the Council's Stewardship Plan. It would support 2 FTE's: 1 FTE which is the current staff who coordinates Council meetings and plan implementation and an additional FTE to assist in Plan implementation. This additional capacity for the Foundation would provide a dedicated staff assigned to project development, project management, and grant writing/fundraising to implement the Stewardship Plan elements consistent with Chinook recovery and expanded to a multispecies approach.

Local based economy agriculture support (Farmers market/CSA)
These funds would be in addition to other support for the development of a Farmers Market in the Nisqually Watershed to promote locally produced goods and services, with emphasis on developing a stable and valuable outlet for agricultural products produced in the watershed. The significant loss of our farming communities in the watershed is a direct result of shrinking market access and greatly reduced profitability. This has and continues to result in a rapid loss of these valuable lands through conversion into other uses that are far less compatible with salmon recovery. A strong and vibrant agricultural economy will allow these lands to stay in production and allow the land owner more opportunities to manage their lands for their business needs and the needs of salmon.
Funds for this project would support the construction, advertising, recruitment, and initial management costs for the market until it can become self sustaining. Project construction would occur in 2008 and the market would be in full operation in 2009.

Promotion/Support of Sustainability Certification
This additional capacity for the Foundation would provide a dedicated staff to implement our local based certification strategy and provide technical support to interested parties to receive third party and Nisqually River Council endorsement of activities. This is a vital program necessary for the long term success of the Nisqually Stewardship Plan and critical to salmon recovery. Our plan describes a process of working with the various third party certification systems, like Salmon Safe and SFC to encourage and promote sustainable activities throughout the watershed. These activities will greatly reduce the impact of these activities in the watershed and support salmon and wildlife survival and recovery while also supporting a vibrant economy operating in harmony with the ecosystem in the Nisqually. This dedicated position would work directly with the various certifying

organizations and our watershed community to assist in implementation and assure that the programs fit our needs in the Nisqually.

Low Impact Development technical assistance/landowner incentive program
These funds would be used to provide direct support and incentives for the implementation of LID and Arch guidelines in the watershed. This would be in the form of small grants, permitting assistance, engineering and design assistance, marketing, and public education and outreach. The goal is to have three significant LID projects in progress in the watershed by 2009.

support local community plan development consistent with watershed plans
This would allow the Foundation to provide tech support to local communities and local governments to develop plans consistent with the Stewardship Plan. This support could come in the form of small grants, professional expertise and staff time through the Foundation, and coordinated outreach and facilitation. Our goal is to have functional, consistent, and effective community plans in place throughout the watershed that support salmon recovery and ecosystem functions, with at least one in place by 2009. We also intend to support the development of a watershed approach to GMA implementation with our three counties during the next cycle of updates.

Invasive species management program
Funds to develop a comprehensive plan, including locations and priorities for action, for the control, removal, and elimination of harmful invasive species. We intend to have a plan in place and at least two major efforts underway by 2009.

Outreach and Education
Nisqually River Education Project (watershed schoolchildren ed)
This program organizes hands on watershed education opportunities for schoolchildren throughout the Nisqually River Watershed. This includes organizing students to help with hands on restoration projects such as tree plantings or carcass tossing as well as monitoring projects to evaluate the health of the watershed through water quality samples or benthic macro invertebrate analysis. This program has operated since 1990 without base funding and is now at substantial risk as funds become scarce. Sustainability and ultimately the fate of salmon and this watershed are in the hands of our residents. It is only through a well informed community that understands and supports salmon recovery that our efforts have any chance of long term success. This program has touched the lives of 6,000 students and is critical to our long-term success in developing a more informed, concerned, and involved citizenry that is supportive of salmon recovery actions.

Nisqually Stream Stewards Program
The Nisqually Tribe's salmon recovery outreach and education program. Organizes educational and hands-on opportunities for watershed citizens to become more informed and active stewards of salmon habitat. This is a key program that complements the Nisqually River Education Project in developing a more informed watershed citizenry. Cost of the program is 1 FTE plus the Tribe's 54 % indirect rate as well as associated program support costs for volunteer event supplies, volunteer monitoring equipment, program newsletter etc.

Pierce Stream Team
The Pierce Conservation District Ed and outreach program that organizes volunteers for stream health projects such as tree planting projects and water quality

monitoring. The program works countywide but is a key partner in many Nisqually planting projects and has an extensive network of water quality monitors on Nisqually streams. The program is currently fully funded through a combination of District Assessment funds and the support of partner local jurisdictions.

Nisqually National Wildlife Refuge Education Program (Goal III, Obj. 3.1)
Hire a permanent-full time environmental education specialist (GS-09) ($62,150 annual cost) on the Refuge staff to manage the environmental education program. As changes are made to habitats on the Refuge, opportunities would be created to include teachers and students in these long-term restoration activities, both hands-on assistance in the restoration work and monitoring of changes in the habitat.

Puget Sound nearshore education/outreach
The Nisqually Reach Nature Center supports an education/outreach program that teaches people about the value of nearshore and estuary habitat. Many of the educational opportunities include involving volunteers in the collection of habitat monitoring data so that they can get a hands-on understanding of the ecosystem. This request would support 1 FTE and some associated program costs.

Nisqually subbasin community group development
Provide organizational support to organize and activate citizen based groups within our sub-basins in the watershed to implement salmon recovery and the broader Stewardship plan. Have three of these sub-basins organized and active by 2009.

Instream flow protection

Nisqually Watershed Management Plan Implementation (2514)

The Nisqually watershed 2514 budget request contains the following items:

1. Storage - Comprehensive evaluation of storage opportunities, including evaluation of storage projects proposed in the Level 1 Storage Assessment and identify other potential storage projects (numerous plan action items). NOTE: Includes funding for Eatonville's recently submitted study concerning groundwater storage. Cost Estimate: $300,000
2. Development of watershed-wide water balance to better understand water availability by sub-basin (WR-9). Gain better understanding of technical basis for stream closures watershed-wide. The basis of closures could be studied as part of instream flow study (ISF-2). Identify and gage flow compromised streams based on intermittent nature and beneficial use(s). Design and install a network of stream gauging stations to monitor these streams and develop an understanding of the hydrology, including current and historical conditions via data collection, analysis and modeling. (ISF-3). Cost Estimate: $250,000
3. Aquifer Modeling. Provide supplemental funding to improve understanding of direction of regional (McAllister) groundwater flow and volumes. Update water budget for sub-basin using data collected for the various studies recommended in this action plan. (MC-3/MC-12) Cost Estimate: $150,000

4. Stream Flow Gauge - Contract with the USGS to install ($25,000) and maintain ($15,000/year) over a number of years a stream flow gauge that will report in real time at a location on the Nisqually River just above the limit of tidal influence (approximately RM 4.3). Cost estimate: $75,000

5. Yelm Reclaimed Water Expansion - Development of a comprehensive approach for expanding the Yelm reclaimed water system, including identification of new reuse opportunities and the location and sizing of new reclaimed water pipe. (Y-6a) Cost estimate: $50,000

6. Mashel Flow Supplement. Preliminary investigation of methods to supplement flows to the Mashel River (ISF-5 - in part). This would include development by Eatonville of a reclaimed wastewater system ($75,000) and the feasibility of a pipeline connection between the upper Nisqually River (Elbe/Alder area) and the Mashel subbasin ($75,000). NOTE: Both of these are feasibility studies. If the idea proves feasible, we would seek future design and implementation funding. Cost estimate: $150,000

7. Ensure adequate water quality monitoring of groundwater in designated critical aquifer recharge areas. As part of the Nisqually Watershed Water Quality Monitoring Plan, the adequate monitoring of groundwater in these areas should be addressed (WQ-5). Develop and implement a water quality monitoring program and integrate into current WQ monitoring plan. Cost Estimate: $100,000

8. Water Bank - Investigate the potential for developing a system for the Nisqually watershed for the purchase, sale or lease of water rights (e.g. water bank). Cost estimate: $25,000

Total 2514 request: $1,100,000

Salmon Recovery coordination/implementation

The items listed in this section are key to the overall ability to coordinate and implement salmon recovery in the Nisqually watershed.

Lead entity coordination/Salmon Recovery Program Management

In order to effectively manage Nisqually salmon recovery implementation and the lead entity process there is a need for at least 1 FTE. This position currently exists and we would like to continue it.

GIS support for plan development/implementation

This supports 1 FTE that develops and tracks watershed data and salmon recovery projects in a GIS database. This position is critical to our ability to plan effectively, to coordinate our actions across the landscape, to communicate our projects and progress to others, and to track our progress. This position currently exists and we would like to continue it.

Development and Coordination of Adaptive Management Program

There is a need for an additional FTE to assist in the important tasks of plan development, tracking our implementation to ensure we are meeting our plan goals and objectives, using tools as they become available to evaluate our current action plan, and use the information from monitoring and new tool support to recommend updates to the plan on a yearly basis.

Identify and research key uncertainties to improve plan

There are key uncertainties identified in the plan that need to be investigated. There is an ongoing need for at least 1 FTE that investigates key uncertainties through research projects.

EDT model web access maintenance

Our plan was developed using the EDT model to generate hypotheses about courses of action that will be of greatest benefit to the fish. We continue to use the EDT model to update our plan and to evaluate new actions we are considering. We would like to support the continued availability of this critical tool on the web by paying an annual maintenance fee.

Adaptive Management database
There is need for a regional system that clearly demonstrates what actions we are taking for salmon recovery, how we believe those actions will affect salmon stocks, and how well we are making progress as we implement those actions. This item would support the costs of the Nisqually contribution to developing that system and keeping it updated.

Habitat Project Monitoring

Implementation Monitoring/Effectiveness/Validation Monitoring
Need $20,000 annually for non-staff costs (i.e. equipment, lab costs, consulting, travel, publishing, etc.) for the new Adaptive Management staff to implement the monitoring of actions, projects and recovery plan.

Monitoring of Refuge Estuary Restoration project:
Need .5 FTE GIS/Data Management specialist ($31,100 annual cost) and 1.5 FTE Fish and Wildlife Biologists ($94,000 annual cost) annually. 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.

Monitoring of estuary restoration at Red Salmon Slough
Need $50,000/annually for contractor to monitor and document the physical aspects of the Phase 1 and 2 estuary restoration project at Red Salmon Slough.

Ohop Creek Restoration monitoring
Need $50,000 / annually to monitor the effectiveness of the Ohop Creek restoration project plus $140,000 for developing a monitoring plan, gaining two years of pre-project data and completing an as-built report after implementation of the on-the-ground project.

Stock Monitoring Support
develop new spawning escapement models
The current escapement model for Nisqually Chinook needs to updated so that we are able to more accurately estimate our returning numbers of Chinook and the proportion of NoR's and HoR's on the spawning grounds.

hatchery CWT return monitoring
This would ensure that all coded wire tags that return in returning Chinook salmon to the Nisqually hatcheries were collected and analyzed. This information is essential to our stock monitoring program.

spawning distribution surveys
There is an ongoing need for a biologist and technical crew that collect the data on the spawning grounds necessary to estimate escapement and to understand the geographic and timing distribution of Chinook for ongoing salmon recovery planning work.

juvenile fish usage of estuary and nearshore
The Tribe in partnership with USFWS has conducted monitoring of juvenile salmon usage of the estuary for the last three years. Sites representative of different habitat types in the estuary are sampled once every other week during the migratory period. This information is helpful to our understanding of how restoration may affect salmon usage of the estuary and gives us a qualitative sense of the outmigrating population. In 2006 the project is expanding to nearby nearshore sites so that their usage of that environment can also be better understood.

otolith study/life history diversity monitoring
This study uses otoliths (ear bones) of salmon to learn more about their life history. Otoliths grow daily and record growth in a way similar to tree rings. USGS scientists are refining a method of analysis of these otoliths that can clearly delineate the life history of each analyzed fish. This information will be essential to us being able to have some potentially empirical evidence of the impacts our restoration efforts may be having on life history diversity of the population, (one of the key VSP). We can also use the analysis on returning adults to see if a particular life history strategy is more successful at surviving to return to spawn. These funds would support the analysis of otoliths already collected and additional otoliths that will be collected in subsequent years.

PRIORITY PROJECTS AND PROGRAMS BENEFITING NON-LISTED SPECIES

Multispecies Nisqually Salmon Plan
Considerable work has already been done to begin developing a multispecies Nisqually Salmon Recovery Plan. However the project has been delayed due to a lack of resources and time. These funds would support the completion of that work.

Steelhead smolt acoustic tag study
An acoustic tracking project will place acoustic tags in wild Nisqually steelhead smolts in Spring of 2007, 2008 and 2009 and receivers placed in the Nisqually River and estuary, as well as in Puget Sound, the Straits of Juan de Fuca and Georgia, and beyond. Combined information from these receivers will yield a summary of movement and mortality patterns for Nisqually steelhead smolts, which is needed for recovery planning for the declining Nisqually steelhead run. This project is underway in 2006 as a pilot year.

Tanwax Creek Riparian restoration
Tanwax creek historically supported all Nisqually salmon species. Its lower reach is need primarily of replanting of native vegetation to shade out reed canary grass and restore a native vegetation riparian buffer.

Three-Year Watershed Implementation Priorities template

								3 - YEAR WORKPLAN										
								2008		2009		2010			For Habitat projects (see key for categories)			
Priority Tier	Primary Limiting Factors Addressed	Action name and description	Likely sponsor	Total cost of first three years (2008-10)	Proposed SRFB (or grant) share	Local share or other funding	Source of other funds	Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Likely end date	Acquisition	Restoration type, if applicable	Location w/in watershed	Performance
CAPITAL PROJECTS																		
Habitat Capital Projects (Protection)																		
I	1, 3	Lower Nisqually mainstem, McAllister Creek acquisition (200 acres)	USFWS	1,500,000				negotiate with sellers, begin purchasing properties	500,000	purchase properties	750,000	purchase properties	250,000		AR	L	Mainstem	L
I	2	Acquire intact South Puget Sound nearshore habitat	multiple sponsors	3,000,000	3,000,000			acquire properties	$1,000,000	acquire properties	$1,000,000	acquire properties	$1,000,000	on-going	AR and AP	L	Marine	L
I	1,3	Acquire 1 mile Mashel shoreline, 200-400 ft. buffer, 20 - 40 acres	Town of Eatonville	695,250				acquire property	$695,250					2008	AR	L	Tributaries	L
I	1,3	Acquire 50 acres, 0.5 mile of Nisqually Mainstem per year	Nisqually Land Trust (NLT)	2,500,000	2,500,000			acquire properties	$833,334	acquire properties	$833,333	acquire properties	$833,333				Mainstem	
I	1,3,4,5	Acquire 1 mile Ohop creek, 100 acres	NLT/Pierce Conservation District	675,000	675,000			acquire property	$675,000								Tributary	
I	1,3,5,6	Acquire 80 acres along Mashel River	NLT	250,000	250,000			acquire property	$250,000								Tributary	
	1,3,4,5,6	Acquire small parcels as available along Ohop Creek and Mashel River	NLT	405,000	405,000			acquire property	$135,000	acquire property	$135,000	acquire property	$135,000				Tributary	
I	1,2,7	Acquire easement over 249 acres, 1.2 miles of Nisqually mainstem, off channel creek and large wetland	NLT	750,000	750,000					acquire easement	$750,000						Mainstem	
Habitat Capital Projects (Restoration)																		
I	1, 2, 3, 7	Nisqually Refuge Estuary Restoration 700 acres (Obj.1.1)	USFWS	6,500,000		$2,000,000	Federal/Ducks Unlimited	project construction	5,000,000	project construction	1,000,000	project completion	500,000	2010		E (700 ac), R (38 ac)	Estuaries	E and R
	1, 2, 3	Invasive species management at NWR (obj. 1.4)	USFWS	222,000				identification and control (1FTE plus operational costs	72,000	identification and control (1FTE plus operational costs	74,000	identification and control (1FTE plus operational costs	76,000	on-going		E (200 ac), W (200 ac), R (60 ac)	Estuaries	
	1,3	Nisqually River mainstem off-channel restoration - multiple potential projects	Multiple potential sponsors	630,000				willing landowner outreach	$30,000	Project planning, Engineering and design	$100,000	project construction	$500,000	2015		W,R,F	Mainstem	W, R, F
	3	Nisqually vegetation management	Nisqually Tribe	$1,075,791	$925,791	150,000	Nisqually Tribe	groundtruth, review assessment, prioritize mainstem reveg site, revegetate priority areas	$341,250	continue to implement planting plans, maintain plantings	$358,313	continue to implement planting plans, maintain plantings	$376,228	on-going		R	throughout	R (2+ miles/ 15+ acres)
	1,2,3,4	Red Salmon Creek/Wash Creek restoration phases II, III, IV and V	NLT	70,000	70,000			finish phase II, begin phase III	$20,000	finish phase III, begin phase IV	$30,000	finish phase IV, being phase V	$20,000				Tributary	
	2,3	Scott estuary restoration	NLT	30,000	30,000					management plan development	$10,000	phase I restoration	$20,000				Estuaries	
	1,3,7	Nisqually River mainstem Powell Creek wetland off-channel restoration maintenance	NLT	10,000	10,000			restoration maintenance	$5,000	restoration maintenance	$5,000						Mainstem	
	1,3	Wilcox Flats Nisqually River mainstem and off channel restoration	NLT	$210,000	210,000			phase II	$70,000	phase III	$70,000	phase IV	$70,000				Mainstem	

								2008		2009		2010			For Habitat projects (see key for categories)			
Priority Tier	Primary Limiting Factors Addressed	Action name and description	Likely sponsor	Total cost of first three years (2008-10)	Proposed SRFB (or grant) share	Local share or other funding	Source of other funds	Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Likely end date	Acquisition	Restoration type, if applicable	Location w/in watershed	Performance
	1,3	Hahn property restoration	NLT	$35,000	35,000			phase I	$25,000	restoration maintenance	$5,000	restoration maintenance	$5,000				Mainstem	
	1,3,4	Browder/Barlett/Kist revegetation	NLT	$130,000	130,000			restoration maintenance	$5,000	planting	115,000	restoration maintenance	$10,000				Mainstem	
I	2,3	Red Salmon Slough Estuary Restoration Phase 3	Nisqually Tribe	505,000	280,000	225,000	various	revegetation, design, permitting	245,000	dike removal, revegetation	240,000	revegetation	20,000	2010		E	Estuary	R (75 acres) E (300 acres enhanced)
	5	Salmon Carcass nutrient enhancement	Nisqually Tribe	77,273	57,273	20,000	Nisqually Tribe	store carcasses, organize volunteer salmon carcass distribution	$25,000	store carcasses, organize volunteer salmon carcass distribution	25,750	store carcasses, organize volunteer salmon carcass distribution	26,523	on-going			throughout	
I	2	Mashel Eatonville Reach riparian revegetation	Multiple potential sponsors	123,636	123,636			id willing landowners, develop planting plans, implement planting plans	$40,000	continue to implement planting plans, maintain plantings	$41,200	continue to implement planting plans, maintain plantings	$42,436	2012		R	Tributary	R (6 acres)
	3,4,5,6	Farm planning focused on high priority salmon reaches	Conservation Districts	679,998				landowner outreach, farm plan development	$220,000	landowner outreach, farm plan development, plan implementation/ cost share	$226,600	landowner outreach, farm plan development, plan implementation/c ost share	$233,398				throughout	
I	2,3,7	Nisqually -Pt.Defiance nearshore restoration project	SPSSEG	3150000				Engineering, design, permitting	$150,000	project construction	$3,000,000			2090			Marine	23 miles
	2	Steilacoom to Sequalitchew Reach Hydraulic study and restoration	SPSSEG	1,000,000	880,000	120,000	ESRP	Conduct surveys	$60,000	design and permitting	$60,000	project construction	$880,000	2011			Marine	2 miles
I	1,3,4,5,6	Lower Ohop Valley restoration - channel reconstruction and valley floor revegetation	SPSSEG	10070000		10,070,000	various (incl. SRFB)	project planning, permitting, seek funding	$70,000	project construction, riparian revegetation	$7,500,000	Revegetation/adj acent wetland restoration	$2,500,000	2010		1,3,4,5,6	Tributary	
I	1,3	Mashel Eatonville Reach in-stream Restoration Phase II	SPSSEG	950000	950,000			landowner outreach, Engineering and design	$100,000	design and permitting	$100,000	project construction	$750,000				Tributary	
	1,7	McKenna Creek Culvert	SPSSEG	$125,000	125,000			design and permitting	$25,000	project construction	$100,000						Tributary	
		Nisqually Pines Culvert	SPSSEG	$25,000		25,000	NFWF	construction	$23,000	Re-planting	$2,000							
		Nisqually Wilcox Side-channel	SPSSEG / Tribe	$225,000	225,000			Feasibility study, design, permitting	$35,000	Construction	$190,000							
	1,3,7	Wilcox Side-channel	SPSSEG	315,000	315,000			project planning, permitting, seek funding	75,000	project construction, riparian revegetation	200,000	revegetation	40,000				Mainstem	
Hatchery Capital Projects																		
		Seasonal weir to reduce hatchery fish straying	Nisqually Tribe	$1,575,000				Secure funding, permits	$75,000	weir construction, operation	$1,500,000			2009				
TOTAL CAPITAL NEED:				**37,508,947**														
NON-CAPITAL PROGRAMS																		
Harvest Management support																		
		Renegotiation of pre-terminal harvest rates	Nisqually Tribe	$1,013,040	$333,361	679,679	BIA	3 FTE Harvest policy and technical staff	$323,500	3 FTE Harvest policy and technical staff	$339,675	3 FTE Harvest policy and technical staff	$349,865	on-going				
Future Habitat Project Development																		

								2008		2009		2010			For Habitat projects (see key for categories)			
Priority Tier	**Primary Limiting Factors Addressed**	**Action name and description**	**Likely sponsor**	**Total cost of first three years (2008-10)**	**Proposed SRFB (or grant) share**	**Local share or other funding**	**Source of other funds**	**Year 1 Scope**	**Year 1 Cost**	**Year 2 Scope**	**Year 2 Cost**	**Year 3 Scope**	**Year 3 Cost**	**Likely end date**	**Acquisition**	**Restoration type, if applicable**	**Location w/in watershed**	**Performance**
		Lower Nisqually Reach restoration assessment	Nisqually Tribe	$103,000	20,000	83,000	BIA	conduct assessment	$42,000	complete assessment, id	$41,000	permitting, secure funding	$20,000	2010				
		I-5 fill removal feasibility analysis	Nisqually Tribe	400,000						start analysis	$200,000	Complete analysis	200,000	2010				
		Mainstem Nisqually LWD assessment and restoration plan	Nisqually Tribe					Identify assessment protocol, contract consultants and engineers	$20,000	Conduct assessment, identifiy projects	$65,000	Publish results and engineering designs	$50,000	2010				
		Mashel Assessment	SPSSEG	89,000		89,000	SRFB	Conduct assessment, identifiy projects	45,000	Publish results and engineering designs	44,000			2009				
Habitat protection																		
		Protection enforcement on Nisqually Wildlife Refuge	USFWS	141,000				.5 FTE Enforcemer	47,000	.5 FTE Enforceme	49,000	.5 FTE Enforcemer	51,000	on-going				
		tracking DNR Aquatic HCP	USFWS	220675														
		NLT property stewardship/ongoing protection	NLT	170,625				property stewards	$56,875	property stewards	$56,875	property stewards	$56,875	on-going				
		Protection enforcement on NLT properties (stop ATV damage, dumping & vandalism	NLT	150,000	150,000			implement plans	$40,000	implement plans	100,000	maintenance	10,000	on-going				
Habitat protection -- monitoring of habitat quality																		
		Ohop monitoring plan	SPSSEG / Tribe	$170,000	170,000			Furbish monitoring plan /implement first year pre-project	$80,000	Implement 2nd year pre-project /As-built	$60,000	Implement 1st year post-project	$50,000					
Habitat protection -- monitoring of regulatory programs																		
		Forest and Fish/watershed analysis prescription implementation monitoring/technical assistance	Nisqually Tribe	$298,354				Staffing (1 FTE)	$95,275	Staffing (1 FTE)	$100,039	Staffing (1 FTE)	$103,040	on-going				
Habitat protection -- participation in policy or regulatory updates																		
		Thurston County CAO revision	Thurston County	$125,000				staff time	$125,000					2008				
		Thurston County Shoreline Master Program revision	Thurston County	$333,333				staff time	$166,667	staff time	$166,667			2009				
Watershed Plan Implementation																		
Outreach & Education																		
		Nisqually National Wildlife Refuge Education Program (obj. 3.1, Goal III)	USFWS	220,000				outreach and education	73,000	outreach and education	77,000							
Outreach & Education -- stewardship																		
Instream Flow protection																		
Salmon Recovery coordination/implementation																		
		In-stream, off-channel, and estuary habitat project Restoration Biologist	Nisqually Tribe	$328,300				1 FTE (including 54% indirect)	$105,000	1 FTE (including 54% indirect)	$110,000	1 FTE (including 54% indirect)	113,300	on-going				

								2008		2009		2010			For Habitat projects (see key for categories)			
Priority Tier	Primary Limiting Factors Addressed	Action name and description	Likely sponsor	Total cost of first three years (2008-10)	Proposed SRFB (or grant) share	Local share or other funding	Source of other funds	Year 1 Scope	Year 1 Cost	Year 2 Scope	Year 2 Cost	Year 3 Scope	Year 3 Cost	Likely end date	Acquisition	Restoration type, if applicable	Location w/in watershed	Performance
		Salmon RecoveryProject Technician	Nisqually Tribe	$126,591				.5 FTE (including 54% indirect)	$40,425	.5 FTE (including 54% indirect)	$42,446	.5 FTE (including 54% indirect)	$43,719.64	on-going				
		Lead entity coordination/Salmon Recovery Program Management	Nisqually Tribe	$387,341				Staffing (1 FTE + 54% indirect)	$124,740	Staffing (1 FTE + 54% indirect)	$129,360	Staffing (1 FTE + 54% indirect)	$133,240.80	on-going				
		GIS support for plan development/implementation	Nisqually Tribe	$387,341				Staffing (1 FTE + 54% indirect)	$124,740	Staffing (1 FTE + 54% indirect)	$129,360	Staffing (1 FTE + 54% indirect)	$133,240.80	on-going				
		Development and Coordination of Adaptive Management Program	Nisqually Tribe	$368,676				Staffing (1 FTE + 54% indirect)	$118,580	Staffing (1 FTE + 54% indirect)	$123,200	Staffing (1 FTE + 54% indirect)	$126,896.00	on-going				
		Identify and research key uncertainties to improve plan	Nisqually Tribe	$368,676				Staffing (1 FTE + 54% indirect)	$118,580	Staffing (1 FTE + 54% indirect)	$123,200	Staffing (1 FTE + 54% indirect)	$126,896.00	on-going				
		EDT model web access maintenance	Nisqually Tribe	$35,360				system maintenance/access	$11,000	system maintenance/access	$12,000	system maintenance/access	$12,360.00	on-going				
		NLT administrative/facilities support	NLT	$150,000				program support	$50,000	program support	$50,000	program support	$50,000	on-going				
		Adaptive Management database	Nisqually Tribe	$394,569				1 FTE data manager, database maintenance costs, maintenance, data input	$126,000	1 FTE data manager, database maintenance costs, maintenance, data input	$132,300	1 FTE data manager, database maintenance costs, maintenance, data input	$136,269.00	on-going				
Habitat Project Monitoring																		
	1, 2, 3, 7	monitoring of Refuge estuary restoration projects	USFWS	393,300				pre project and post project monitoring	131,000	post project monitoring	137,500							
	2,3,7	Monitoring of estuary restoration at Red Salmon Slough	Tribe	174,000	119,000	55,000	Tribe	project monitoring	$55,000	project monitoring	$58,000	project monitoring	61,000					
		Ohop monitoring plan	SPSSEG / Tribe	$170,000	170,000			Furbish monitoring plan /implement first year pre-project	$80,000	Implement 2nd year pre-project /As-built	$60,000	Implement 1st year post-project	$50,000					
	1,3,4,5,6,7	Implementation/Effectiveness /Validation Monitoring	Tribe	143,263				Monitoring of projects / plan	$46,350	Monitoring of projects / plan	$47,741	Monitoring of projects / plan	$49,172.72	on-going				
Stock Monitoring Support																		
	1, 2, 3, 7	juvenile fish usage of estuary and nearshore	Tribe/USFWS/ SPSSEG	345000				minimal estuary s	100,000	minimal estuary s	100,000							
TOTAL NON-CAPITAL NEED:																		
TOTAL CAPITAL & NON-CAPITAL NEED:																		
PRIORITY PROJECTS AND PROGRAMS BENEFITTING NON-LISTED SPECIES																		
		Multspecies Nisqually Salmon Plan	Tribe	$150,000				coordinate plan development,	$150,000									
		Steelhead smolt acoustic tag study	Tribe	$177,000				tag 50 steelhead smolts	57000	tag 50 steelhead smolts	59000	tag 50 steelhead smolts	61000					
		Replacement of 3 Tanwax Ck. culverts	SPSSEG	$400,000				acquire funding, design,	75,000	permitting	25,000	construction	300,000					
		Horn Creek Culvert replacement	SPSSEG															
	3,4,5,6	Tanwax Creek Riparian restoration	Multiple potential sponsors	$96,000				revegetate stream channel and maintain	$31,000	revegetate stream channel and maintain	$32,000	revegetate stream channel and maintain	$33,000					
TOTAL NON-LISTED SPECIES NEED:																		