2009 Narrative to South Puget Sound 3-Year Project List

For the purposes of recovery and sustainability planning "South Sound" is defined as that area of Puget Sound south of the Tacoma Narrows that includes the marine, near-shore, estuaries, and freshwater environments. This area includes: all of WRIA's 11, 13, and 14, and portions of WRIA's 10/12 and 15; portions of Kitsap, Mason, Pierce and Thurston Counties as well as numerous cities and municipalities as well as portions of the usual and accustomed areas for the Nisqually, Puyallup, and Squaxin Island Tribes.

Numerous local groups work together to collaborate on recovery and sustainability issues including: the South Sound Core Group, the South Sound Salmon Recovery Group, and the South Sound Salmon Technical Group.

The South Puget Sound Core Group provides policy level direction and oversight. The stated purpose of this group is to: 1. help steer the development and implementation of the Puget Sound Partnership action agenda as it pertains to South Sound in the near-term; 2. enhance regional collaboration for management of the South Puget Sound ecosystem for the longer term. The group consists of members from:

- Puget Sound Partnership Ecosystem Coordination Board
- Pierce County
- Thurston County
- Mason County
- Kitsap County
- City of Olympia
- Port of Shelton
- Port of Olympia
- City of Shelton
- City of University Place
- City of Tacoma
- City of Lacey
- Key Peninsula/Gig Harbor/Islands Watershed Council
- Squaxin Island Indian Tribe
- Nisqually Indian Tribe
- Puyallup Indian Tribe
- Citizens for a Healthy Bay
- Coalition for Clean Water
- Tacoma/Pierce County Health Department
- Nisqually River Council
- South Puget Sound Salmon Enhancement Group
- Chambers-Clover Watershed Council
- MetroParks Tacoma
- Fort Lewis, McChord Military Bases
- Cascade Land Conservancy
- Town of Steilacoom
- People for Puget Sound
- Puget Sound Partnership
- Department of Ecology

- Department of Fish and Wildlife
- Mason Conservation District
- Thurston Conservation District
- Pierce Conservation District
- WSU Extension

The South Sound Salmon Recovery Group is a local planning group consisting of members from Kitsap, Mason, Pierce and Thurston Counties, the Nisqually, Puyallup and Squaxin Island Tribes, WRIA's 10/12, 11, 13, 14, and 15, the South Puget Sound Salmon Enhancement Group, and the Washington Department of Fish and Wildlife. The goal of this group is to coordinate protection and restoration efforts in South Sound concerning salmon populations.

The South Sound Salmon Technical Team consists of representatives from Pierce and Thurston Counties, the Nisqually and Squaxin Island tribes, the Washington Department of Fish and Wildlife, and the South Sound Salmon Enhancement Group. This group provides input at a technical level for South Sound salmonid issues and coordinates with the technical teams of the various WRIA's and State and Federal agencies.

Salmon Recovery

The goal of the South Puget Sound Salmon Recovery Group is to use an ecosystem-based, multi-species approach to restore all salmonid species in the South Sound to a sustainable, harvestable level by ensuring that there are properly functioning near-shore and freshwater habitats that serve their spawning, rearing, refuge, feeding, physiological transition, and migratory needs.

The South Sound Salmon Technical team produced the Chinook and Bull Trout Recovery plan. This work, subsequently adopted by NOAA Fisheries, addressed near-shore habitat south of the Tacoma Narrows. The group continues to refine the document by adding additional levels of detail and producing new tools to select and prioritize nearshore projects. The South Sound Recovery Plan identified and addressed the following human-induced stressors that are contributing to the status of the salmon in the nearshore and the hypothesized effect on the Viable Salmonid Population:

- Shoreline Armoring
- Overwater Structures and Ramps
- Stormwater and wastewater
- Riparian Loss
- Wetland and Estuarine Modification
- Boat Traffic
- Invasive Species
- Shellfish Aquaculture

The South Sound Technical Group, in conjunction with the lead entities technical and citizens committees, have devised and adopted a process for prioritizing projects in South

Sound that are deemed to be of regional significance at a South Sound wide scale regardless of WRIA boundaries. This is envisioned to be an interim method of dealing with South Sound wide projects.

The technical group is continuing to expand their analysis beyond the submitted recovery chapter to include understanding of how habitat alterations have affected the Viable Salmonid Population parameters for multiple species, hypothesized use of the near-shore by salmonids, and interactions between hatchery and naturally produced fish. They have included as a programmatic action an ongoing facilitation of the technical committee, further development of the stressor models to be more explicit about effects on VSP parameters, and additional GIS data development. A future outcome of the technical committee will be the development of an adaptive management plan.

The submitted 3-year project list includes actions that address the nearshore stressors. We hypothesize that these projects will benefit multiple species, including Chinook, bull trout, coho, chum, pink, steelhead, other salmonids, and forage fish.

In addition to the nearshore actions, we include freshwater actions that address habitat concerns identified in limiting factors reports and lead entity strategies that directly affect marine water quality. A hypothesized list of the species benefited is included on the list for each freshwater project.

The intent of the 3-year list is to provide a strategic short term frame work that is based upon the long term goals contained in the South Puget Sound Chinook Recovery Plan and the various lead entity strategies. It must be noted that the list is designed to be a clearing house of projects for all cooperating South Sound entities to access and is designed for multiple funding sources. To be placed on the list a project must, in general, meet minimum criteria including: have a sponsor willing to do the work in the next three years, have some form of landowner willingness, be part of a strategy or plan that has ranked the project as "tier 1", "high priority" or other form of high ranking. Funding constraints and species targeted are not considered for inclusion on the list.

2008-2009 Progress Update

Specific accomplishments of the South Sound groups over the last year include:

- Hosted a second South Sound Science Symposium
- Produced a draft GIS based nearshore project selection tool
- Produced a draft project evaluation tool
- Obtained a grant to facilitate a meeting to foster cooperation among South Sound Salmon Recovery group members
- Applied for a grant to help foster the formalization of a South Puget Sound group

In the evaluation of the 2008 Three Year Work Program Update, the RITT provided watershed-specific comments that identified four issues that need further advancement.

- Project prioritization and sequencing needs additional refinement to demonstrate priorities within tier 1 projects.

- Develop a better mechanism and system for documenting and tracking project-specific and overall recovery implementation progress among the South Sound watersheds.
- Identify, develop, and document strategy for addressing capacity needs.
- Continue to increase coordination among South Sound partners.

Issues We Have Advanced During 2008-2009

Project Prioritization and Sequencing: The RITT has identified the need for better refinement of the South Sound project prioritization and sequencing efforts. The South Sound Salmon Recovery Group has developed two draft tools over the last year to assist in this regard.

1. Project evaluation tool- this allows us to distinguish Projects of Regional Significance and Projects of Local Significance. Projects are evaluated based on the degree of habitat stressor removed, the number of different habitat types that will be restored, and project readiness. Projects of Regional Significance are those that completely remove stressors impacting multiple habitat types, and are well developed and nearly ready for construction. Information is displayed in a matrix format that places projects in bins that can be used for prioritization.
2. Nearshore project selection tool- this is a GIS based modeling exercise that rates and prioritizes the entire South Sound nearshore at the Shore Zone unit level. In essence this is a refinement of the mapping exercise that was conducted for the Chinook and Bulltrout recovery document. A suit of beneficial habitat types are identified mapped and rated. These habitat types include: salt marsh, sub-tidal vegetation, eelgrass, forage fish spawning, pocket estuaries, and proximity to salmon bearing systems. Additionally stressors have been mapped and rated including: armoring, docks, piers, railroads, and riparian loss. The product can be useful for prioritizing areas for restoration and conservation actions.

Develop Project Tracking System- The South Sound partners have committed to using the newly operational Habitat Work Schedule on-line data base produced by the Washington Department of Fish and Wildlife. Currently all proposed and on going projects are being entered into the database. Based on a request from the South Sound group WDFW will be entering a field for each project that specifies regional collaborations such as ours. WDFW is currently reviewing our request to add projects that have already been completed. This system will allow us track projects from conception through completion in a single data portal.

Improved Coordination: The South Sound Salmon Recovery Group is continuing to improve coordination among its partners. We have scheduled a Strategy Workshop on June 16, 2009 to improve the organization and structure of the group around a collaborative, strategic path forward to guide how the group operates. There are three outcomes we want from the workshop.

- First, we need to articulate and formalize our organizational structure. This will help to better understand how the policy and technical groups interact and what their discreet functions are and what capacity is needed to achieve these goals. And we need to better coordinate with other groups in the South Sound and the rest of Puget Sound.
- Second, we need to help project sponsors and lead entity citizen and technical committees understand how different plans, strategies, and initiatives (Chinook Recovery Plan, Lead Entity strategies, Action Agenda, etc.) integrate with each other. This effort could include developing a South Sound Recovery Strategy that is focused on specific actions and areas, including a 10 year project list.
- Third, we need to develop a more formal process for developing a South Sound three year work program for submittal to the RITT and Puget Sound Partnership and for identifying projects of regional significance from that South Sound work program. We envision three-year-work programs broken down into projects of local significance and projects of regional significance.

Shoreline Master Program (SMP) Updates: Pierce County, Thurston County, and Cities of Lacey, Olympia and Tumwater are all in the process of updating their SMPs. The Shoreline Management Act specifically requires SMPs to include protection for salmonids and salmon habitat. As part of their update Pierce County is developing a Restoration Plan for all shorelines within their shoreline jurisdiction, including marine shorelines. Among other resources, the Restoration Plan specifically uses habitat restoration and management recommendations for Carr Inlet identified in the Access database developed by the South Sound Salmon Recovery Group.

South Sound Science Symposium: The theme of the 2009 South Sound Science Symposium was *Linking Threats to Indicators*. The purpose of the Symposium was to connect the region's scientists on ecosystem issues and questions, and explore the threats and indicators unique to South Puget Sound. The presentations addressed three main topics: physical and chemical processes; biology, ecology, and food web dynamics; and human influences and environmental stressors.

Issues Requiring Further Advancement

H-Integration: There has been no new progress toward H-Integration in the South Puget Sound marine waters. There has been progress in freshwater areas such as the Nisqually River. H-Integration typically addresses genetic impacts of harvest and hatcheries, e.g., changes to the ratio of hatchery-origin and natural-origin salmon on the spawning grounds. In marine waters H-Integration needs to focus on ecological interactions such as competition, predation, and life history characteristics. Unfortunately, the planning and modeling tools for H-Integration in marine waters are not available or are not well developed.

Adaptive Management: We have not developed an Adaptive Management Plan for the marine waters of South Sound. However, the writing of the adaptive management plan for the Nisqually River system is underway. Preliminary discussions on the development of a South Sound Adaptive Management Plan have been had by members of the technical

group and it was decided to begin this process once the Nisqually River plan has been produced.

Strategy for addressing capacity needs: We have not developed a strategy for addressing our capacity needs. In the upcoming Strategy Workshop we will work toward a more formal organization. A part of our organizational planning will include an examination of the staffing and resource needs of the South Sound effort.

Sequencing: We have not developed an accepted strategy for sequencing projects among the WRIA's. A fist attempt at this is the newly developed nearshore project selection tool which is designed to provide information on areas where projects are hypothesized to have the greatest benefit as well as provide a geographic context for project selection that should aid in sequencing.

Watershed questions- provided by the PSP

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*?
The South Sound group considers that the recovery and sustainability of all salmonid species is a high priority. In an effort to prioritize the group has hypothesized that actions in the WRIA 11 freshwater as well as the marine nearshore of all of the WRIA's will have the greatest benefit to recover and sustain Chinook populations while benefiting other salmonid species as well.

The submitted 3 year list for South Sound represents the highest priority projects for the respective WRIA's as identified by modeling, strategies, and limiting factors assessments.

2*. What is the status of actions underway per your recovery plan chapter? Is this on pace with the goals of your recovery plan?*
Actions as identified in the recovery plan and the three year list are being implemented. Due to funding constraints we are not on goal to meeting the sequencing implied by the three year list nor are we on goal to meet the pace identified in the recovery plan. We have just begun to quantify the pace of restoration and conservation efforts in anticipation of producing an adaptive management plan.

3*. What is the general status of implementation towards your habitat restoration, habitat protection, harvest management, and hatchery management goals?*
Habitat Restoration:
Some progress- The identification, prioritization, and restoration of habitat has been identified as one of two primary goals for the group to focus initial resources on. The various groups have been making continuous and relatively consistent progress in this regard that is just now being quantified. Several identification and prioritization tools and assessments have been completed that will allow for the selection of high priority projects.

Habitat Protection:
Some progress- The identification, prioritization, and protection of habitat has been identified as one of two primary goals for the group to focus initial resources on. The various groups have been making continuous and relatively consistent progress in this regard that is just now being quantified. Several identification and prioritization tools and assessments have been completed that will allow for the selection of high priority projects.

Harvest and Hatchery Management:
Little progress- Some work has been done by the technical group to attempt to quantify the capacity of South Sound marine waters in regards to juvenile salmonids.

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 implementation priorities for the South Sound group are the conservation or restoration of parcels rated as the highest for juvenile salmon. These have been identified in nearshore assessments, freshwater VSP based models, lead entity strategies, and limiting factor assessments. The three year lists for the South Sound WRIA's lists a subset of these priority projects that need to be implemented to achieve salmonid recovery. Prioritization and sequencing of these projects is accomplished by the technical teams from the WRIA's and the South Sound group using: models, assessment, limiting factor studies, and the nearshore project selection tool, and the project evaluation tool.

There are two main impediments to fully implement this strategy:

- Funding- there is only a fraction of the funding needed to implement the proposed projects. This quantifying of this amount has not yet occurred.
- Formalized cooperation- currently the South Sound is an informal participatory group. Formalizing a structure that allows us to pool resources easier and prioritize regional goals would facilitate implementation of the proposed projects.

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?*
Priorities have not changed. One significant change in approach has been the issue of designating and funding projects deemed to be of regional significance. In 2008 all of the WRIA's that make up South Sound contributed to an estuary project in WRIA 11. This was a significant milestone in our cooperative endeavor as it represented the first time in Puget Sound that multiple WRIA's, which represent the statutorily mandated funding entity, combined on a single project. Over the last year there has been considerable interest in how WRIA's can identify projects of regional significance as well as how to sequence nearshore projects across WRIA jurisdictional boundaries.

6. *What is the status or trends of habitat and salmon populations in your watershed?*
Habitat trends are unknown. We are unaware of a dataset or effort geared toward simulations tracking habitat improvements and degradation. The trends for salmon

populations are variable and are tracked by the co-mangers. This information will be compiled as part of the adaptive management plan.

7. *Are there new challenges associated with implementing salmon recovery actions that need additional support? If so, what are they?*
There are no new challenges.

Subbasin Priority	Level one - subbasin	Level two - initiative	Project Type	Plan Category	Project Name	Project Description	Priority tier of project
1	Estuary Restoration & Protection	Nisqually Wildlife Refuge Restoration & Protection	Restoration	Capital	**Nisqually Refuge Estuary Restoration 760 acres**	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 760 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. 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.	1
1	Estuary Restoration & Protection	Red Salmon Slough Restoration	Restoration	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 (44 acres, 38,000 plants). 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.	1
2	Mainstem Nisqually Restoration & Protection	Lower Nisqually Restoration & Protection	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
2	Mainstem Nisqually Restoration & Protection	Middle Nisqually	Restoration Projects	Capital	**Powell Creek/Nisqually Mainstem Off-Channel Reconnection**	This project has restored access for juvenile salmon to half of the largest off-channel wetland complex on the mainstem river. Previously a series of culverts along a former logging haul road were a partial barrier for juvenile passage. There was also an old bridge abutment along the mainstem of the river where the haul road used to cross the river. This project removed the culverts and bridge abutment. There is still some revegetation work to do along the old haul road and one final culvert to remove at the upper end of the project area.	1
2	Mainstem Nisqually Restoration & Protection	Wilcox Reach Restoration & Protection	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
2	Mainstem Nisqually Restoration & Protection	Wilcox Reach Restoration & Protection	Acquisition for protection	Capital	**Tatrimima Trust Shoreline Acquisition**	This project proposes to acquire an approximately 30 acres in two shoreline parcels along the Nisqually River for permanent protection. The shoreline property is located in Thurston County in the Hobson Road area. These parcels front a broad bend in the Nisqually River and have a total shoreline length of nearly one mile. This is an area of shoreline accretion and avulsion and contains a wide variety of riparian habitat types. It is located in the "Wilcox Reach" of the Nisqually River and is adjacent to a protected shoreline parcel and across the river from the protected Wilcox Flats area. Therefore, acquiring these parcels would make a substantial addition to a relatively large block of protected shoreline and riparian habitat. The property is being offered "For Sale" now (March 2009) for $300,000. It contains an substandard mobile home that would be removed. The property also contains some non-native invasive plants that should be removed and/or controlled.	1
2	Mainstem Nisqually Restoration & Protection	Wilcox Reach Restoration & Protection	Restoration	Capital	**Nisqually River Wilcox Reach Side-Channel**	Recreate historic connection between the Nisqually mainstem and Harts Lake Creek. This project would restore side channel habitat on the mainstem. This area currently is diked but during flooding events regularly breaches the river dike and begins to recreate a connection between the river and the creek. This project would allow this connection to happen more naturally during high flow events while controlling the flow so that the river continues to supply water to the Centralia City Light Power project through its diversion canal.	1
2	Mainstem Nisqually Restoration & Protection	Yelm/McKenna Shoreline Projects	Acquisition for protection	Capital	**McKenna Area Protection Project**	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.	1
2	Mainstem Nisqually Restoration & Protection		Acquisition for protection	Capital	**Mainstem Protection Project**	Acquire 75 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.	1
3	Mashel River Restoration & Protection	Mashel Eatonville Reach Restoration & Protection	Acquisition for restoration	Capital	**Little/Big Mashel Confluence Protection**	Acquire approximately 120 riparian and floodplain acres and 1.4 miles of shoreline near the confluence of the Little Mashel with the Mashel River.	1
3	Mashel River Restoration & Protection	Mashel Eatonville Reach Restoration & Protection	Acquisition for restoration	Capital	**Mashel Riparian Habitat Acquisition Project**	Acquire one mile of the Mashel shoreline in the Eatonville area with a minimum of a 200 to 400 foot buffer and 20 to 40 acres of habitat. This property would be protected and made available for restoration and enhancement of habitat. It would also be made available for public access with a public loop trail along the River.	1
3	Mashel River Restoration & Protection	Mashel Eatonville Reach Restoration & Protection	Restoration Projects	Capital	**Mashel Eatonville Restoration Phase II**	[illegible] acres of the riparian buffer. 16 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 1, 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.	1
3	Mashel River Restoration & Protection	Mashel Eatonville Reach Restoration & Protection	Restoration Projects	Capital	**Mashel Eatonville Restoration Phase 3**	Restore the in-stream, riparian and floodplain habitat of the Mashel River through the Eatonville Segment Reach 7.	1
4	Ohop Creek Restoration & Protection	Lower Ohop Restoration & Protection	Acquisition for restoration	Capital	**Lower Ohop Protection Project**	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.	1
4	Ohop Creek Restoration & Protection	Lower Ohop Restoration & Protection	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.	1
4	Ohop Creek Restoration & Protection	Lower Ohop Restoration & Protection	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.	1
4	Ohop Creek Restoration & Protection	Lower Ohop Restoration & Protection	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.	1
4	Ohop Creek Restoration & Protection		Acquisition for protection	Capital	**Upper Watershed Small Properties Protection**	Acquire small properties along the high priortity streams in the upper watershed, ie. Ohop Creek and Mashel River. 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.	1
5	Nearshore Restoration & Protection	Nisqually to Point Defiance Restoration & Protection	Restoration Projects	Capital	**Nisqually to Pt.Defiance Nearshore Assessment Project**	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 underway the cost estimate for project construction is quite rough at this point.	1
5	Nearshore Restoration & Protection	Nisqually to Point Defiance Restoration & Protection	Restoration Projects	Capital	**Chambers Beach Reconstruction and Riparian Enhancement**	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: • Lack of riparian corridor along the Chambers Beach and presence of several derelict structures located within the intertidal zone. • Lack of continuous functional habitat along the Nisqually to Point Defiance shoreline. • Beach and bank instability as a result of gravel mining operations. 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 and 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.	1
5	Nearshore Restoration & Protection	Nisqually to Point Defiance Restoration & Protection	Restoration Projects	Capital	**Titlow Estuary Restoration**	Replace culvert/tidegate 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.	1
5	Nearshore Restoration & Protection	Nisqually to Point Defiance Restoration & Protection	Restoration	Capital	**Chambers Bay Estuarine and Riparian Enhancement**	Restore marine riparian corridor in and around Chambers Bay through removal of invasive vegetation and planting of native trees and shrubs. Issues: • Industrial use practices of Chambers Bay for timber storage. • Construction of road and mill site over the historic estuarine area. • Construction of dam which has reduced sediment transport. • Gravel mining operations on the north side of the bay which removed mature riparian forest • Construction of the BNSF railway which changed the connection of the estuary to Puget Sound. 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.	1
5	Nearshore Restoration & Protection	Nisqually to Point Defiance Restoration & Protection	Restoration	Capital	**East Nisqually Reach Beach Nourishment Pilot**	[illegible] railine 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.	1
5	Nearshore Restoration & Protection		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.	1
5	Nearshore Restoration & Protection		Restoration Projects	Capital	**Beachcrest Pocket Estuary Restoration**	This project would restore access of the saltwater tides and fish populations of the Nisqually Reach to a small pocket estuary (less than 5 acres in size) along the Thurston County shoreline. It would also open up opportunity for some limited spawning by allowing access of adult salmon to a small stream feeding this estuary. Access will be restored by removing a vertical water control structure which impounds the water, with a bridge that allows for high tides to backwater into the pond.	1
	Nisqually Watershed-Wide Restoration & Protection	Watershed-wide Habitat Restoration and Enhancement	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 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 5 FTE crew to plant and maintain a minimum of 40 acres of riparian vegetation annually and manage 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.	1

Project Name	Limiting Factors	Reference Document for limiting factor	Habitat Type	Activity Type	Project Performance (restore 30 acres of floodplain)	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status
Nisqually Refuge Estuary Restoration 760 acres	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Water Quality, Predation/Competition/Disease, Altered Stream Morphology/Stream Flow Patterns, Loss of Habitat, Reduced Habitat Capacity		Estuary River Delta		Restore 760 acres of estuary habitat,	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Design Completed
Red Salmon Slough Estuary Restoration Phase 3	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Water Quality, Predation/Competition/Disease, Altered Stream Morphology/Stream Flow Patterns, Loss of Habitat, Reduced Habitat Capacity		Estuary River Delta		restore full tidal exchange in Red Salmon Slough and restore 44 acres of riparian habitat	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	Feasibility Completed
Lower Nisqually Mainstem, McAllister Creek Acquisition	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Water Quality, Altered Stream Morphology/Stream Flow Patterns, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity		Estuary River Delta			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	
Powell Creek/Nisqually Mainstem Off-Channel Reconnection	Floodplain Connectivity & Function, Channel Structure and Complexity, Altered Stream Morphology/Stream Flow Patterns, Loss of Habitat, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers, Reduced Habitat Capacity		Wetland			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Steelhead (Secondary Species)	Construction Completed, Conceptual, Land Acquisition Completed
Wilcox Area Protection Project	Floodplain Connectivity & Function, Riparian Areas & LWD Recruitment, Water Quality, Loss of Habitat, Reduced Habitat Capacity		Riparian		protect 250 acres floodplain, riparian area on mainstem	Chinook	Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	
Tatrimima Trust Shoreline Acquisition			Riparian, Rivers/Streams/Shoreline		protect 30 acres floodplain, riparian area, 1 mile mainstem shoreline	Chum, Chinook, Coho, Steelhead, Rainbow, Cutthroat, Pink	Bald Eagle, Marbled Murrelet	Conceptual
Nisqually River Wilcox Reach Side-Channel	Floodplain Connectivity & Function, Riparian Areas & LWD Recruitment, Water Quality, Reduced Habitat Capacity		Riparian			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	
McKenna Area Protection Project	Floodplain Connectivity & Function, Riparian Areas & LWD Recruitment, Water Quality, Loss of Habitat, Reduced Habitat Capacity		Riparian		protect 250 acres floodplain, riparian area on mainstem	Chinook	Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	
Mainstem Protection Project	Floodplain Connectivity & Function, Riparian Areas & LWD Recruitment, Water Quality, Loss of Habitat, Reduced Habitat Capacity		Riparian		protect 225 acres riparian area, 1.5 miles mainstem shoreline	Chinook	Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	
Little/Big Mashel Confluence Protection	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Water Quality, Excessive Sediment, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity		Instream		Protect 105 acres riparian and floodplain acres and 1.25 shoreline miles of the Mashel River	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	
Mashel Riparian Habitat Acquisition Project	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Water Quality, Excessive Sediment, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity		Riparian		Protect 20 to 40 acres of riparian and floodplain habitat, one mile of shoreline on the Mashel.	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	
Mashel Eatonville Restoration Phase II	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Stream Substrate, Stream Flow, Altered Stream Morphology/Stream Flow Patterns, High Water Temperatures, Loss of Habitat, Reduced Habitat Capacity, Biological Processes		Riparian, Instream, Rivers/Streams/Shoreline		restore 2000 feet of in-stream habitat, restore 6 acres riparian buffer on the Mashel River	Chinook, Coho, Steelhead, Rainbow	Cutthroat (Secondary Species), Pink (Secondary Species), River Lamprey	Feasibility Completed
Mashel Eatonville Restoration Phase 3	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Stream Substrate, Stream Flow, Altered Stream Morphology/Stream Flow Patterns, Excessive Sediment, High Water Temperatures, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity, Biological Processes		Upland, Riparian, Instream, Rivers/Streams/Shoreline			Chinook, Coho, Steelhead	Cutthroat (Secondary Species), Pink (Secondary Species), River Lamprey	Conceptual
Lower Ohop Protection Project	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Stream Flow, Water Quality, Predation/Competition/Disease, Altered Stream Morphology/Stream Flow Patterns, Excessive Sediment, High Water Temperatures, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers, Reduced Habitat Capacity		Wetland		Protect 100 acres of riparian and floodplain habitat and 1 mile of shoreline on Ohop Creek	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	
Lower Ohop Valley Restoration - Phase I	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Stream Flow, Water Quality, Predation/Competition/Disease, Altered Stream Morphology/Stream Flow Patterns, Excessive Sediment, High Water Temperatures, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers, Reduced Habitat Capacity		Wetland		restore instream habitat along 1 mile of Ohop Creek and 100 acres of adjacent floodplain, riparian habitat	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	
Lower Ohop Valley Restoration - Phase II	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Stream Flow, Water Quality, Predation/Competition/Disease, Altered Stream Morphology/Stream Flow Patterns, Excessive Sediment, High Water Temperatures, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers, Reduced Habitat Capacity		Wetland		restore instream habitat along 1.5 miles of Ohop Creek and 100 acres of adjacent floodplain, riparian habitat	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	
Lower Ohop Valley Restoration - Phase III	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Stream Flow, Water Quality, Predation/Competition/Disease, Altered Stream Morphology/Stream Flow Patterns, Excessive Sediment, High Water Temperatures, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers, Reduced Habitat Capacity		Wetland		restore instream habitat along 2 miles of Ohop Creek and 200 acres of adjacent floodplain, riparian habitat	Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	
Upper Watershed Small Properties Protection	Floodplain Connectivity & Function, Riparian Areas & LWD Recruitment, Stream Substrate, Water Quality, Excessive Sediment, High Water Temperatures, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity		Riparian			Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	
Nisqually to Pt.Defiance Nearshore Assessment Project	Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Loss of Habitat, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers, Reduced Habitat Capacity		Nearshore (Embayments)			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	
Chambers Beach Reconstruction and Riparian Enhancement	Riparian Areas & LWD Recruitment, Loss of Habitat, Reduced Habitat Capacity		Nearshore (Beaches)			Chum, Chinook, Cutthroat	Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species), Pacific Herring, Surf Smelt, Sand Lance	Feasibility Completed
Titlow Estuary Restoration	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, High Water Temperatures, Loss of Habitat, Reduced Habitat Capacity		Nearshore (Embayments)			Chum, Chinook, Cutthroat	Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species), Pacific Herring, Surf Smelt, Sand Lance	Feasibility Completed
Chambers Bay Estuarine and Riparian Enhancement	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, High Water Temperatures, Loss of Habitat, Reduced Habitat Capacity		Nearshore (Embayments)			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
East Nisqually Reach Beach Nourishment Pilot	Riparian Areas & LWD Recruitment, Loss of Habitat, Reduced Habitat Capacity		Nearshore (Beaches)			Chum, Chinook, Cutthroat	Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species), Pacific Herring, Surf Smelt, Sand Lance	Feasibility Completed
South Sound Nearshore Protection Project	Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Water Quality, Altered Stream Morphology/Stream Flow Patterns, Loss of Habitat, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers, Reduced Habitat Capacity		Riparian			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	
Beachcrest Pocket Estuary Restoration	Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Altered Stream Morphology/Stream Flow Patterns, Loss of Habitat, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers, Reduced Habitat Capacity		Nearshore (Embayments)			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)	
Nisqually Vegetation Management	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Water Quality, Excessive Sediment, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity		Riparian			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	

Project Name	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)	Project ID
Nisqually Refuge Estuary Restoration 760 acres							12/31/2010	Nisqually Wildlife Refuge/Ducks Unlimited	12000000			11-ESTUARY-1001
Red Salmon Slough Estuary Restoration Phase 3							12/31/2010	Nisqually Indian Tribe	505000			11-ESTUARY-1002
Lower Nisqually Mainstem, McAllister Creek Acquisition							12/31/2011	Nisqually Wildlife Refuge	1500000			11-MAINSTEM-1006
Powell Creek/Nisqually Mainstem Off-Channel Reconnection							12/31/2010	South Puget Sound SEG	242000			11-POWELL-1002
Wilcox Area Protection Project							12/31/2010	Nisqually Land Trust	750000			11-MAINSTEM-1008
Tatrimima Trust Shoreline Acquisition							12/31/2010	Nisqually R Land Trust	325000			11-MAINSTEM-1013
Nisqually River Wilcox Reach Side-Channel							12/31/2011	Nisqually Tribe	275000			11-MAINSTEM-1001
McKenna Area Protection Project							12/31/2010	Nisqually Land Trust	750000			11-MAINSTEM-1009
Mainstem Protection Project							12/31/2020	Nisqually Land Trust	2500000			11-MAINSTEM-1007
Little/Big Mashel Confluence Protection							12/31/2009	Nisqually Land Trust	$2,625,000			11-MASHEL-1002
Mashel Riparian Habitat Acquisition Project							12/31/2009	Town of Eatonville	1689510			11-MASHEL-1003
Mashel Eatonville Restoration Phase II							12/31/2010	Nisqually Indian Tribe	1400000			11-MASHEL-1005
Mashel Eatonville Restoration Phase 3							12/31/2011	South Puget Sound SEG	1000000			11-MASHEL-1006
Lower Ohop Protection Project							12/31/2010	Nisqually Land Trust	1200000			11-OHOP-1004
Lower Ohop Valley Restoration - Phase I							12/31/2010	South Puget Sound SEG	2700000			11-OHOP-1001
Lower Ohop Valley Restoration - Phase II							12/31/2011	South Puget Sound SEG	2700000			11-OHOP-1002
Lower Ohop Valley Restoration - Phase III							12/31/2011	South Puget Sound SEG	3150000			11-OHOP-1003
Upper Watershed Small Properties Protection							12/31/2020	Nisqually Land Trust	470000			11-MISC-1006
Nisqually to Pt.Defiance Nearshore Assessment Project							12/31/2010	South Puget Sound SEG	120000			11-NEARSHORE-1002
Chambers Beach Reconstruction and Riparian Enhancement							12/31/2012	South Puget Sound SEG	1700000			11-NEARSHORE-1009
Titlow Estuary Restoration							12/31/2012	South Puget Sound SEG				11-NEARSHORE-1010
Chambers Bay Estuarine and Riparian Enhancement							12/31/2008	South Puget Sound SEG	2100000			11-NEARSHORE-1007
East Nisqually Reach Beach Nourishment Pilot							12/31/2012	South Puget Sound SEG	602300			11-NEARSHORE-1008
South Sound Nearshore Protection Project							12/31/2020	unknown	3000000			11-NEARSHORE-1004
Beachcrest Pocket Estuary Restoration							12/31/2010	South Puget Sound SEG	208500			11-NEARSHORE-1001
Nisqually Vegetation Management							12/31/2020	Nisqually Indian Tribe	1075790.63			11-MISC-1001

	Nisqually Watershed-Wide Restoration & Protection	Watershed-wide Habitat Restoration and Enhancement	Restoration Projects	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.	1	Floodplain Connectivity & Function, Riparian Areas & LWD Recruitment, Water Quality, Excessive Sediment, High Water Temperatures, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity		Riparian		treat 230 acres, over 400 sites infested with invasive knotweed	Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)								12/31/2010	Pierce County Noxious Weed Board	75000			11-MISC-1003
2	Mainstem Nisqually Restoration & Protection	Middle Nisqually	Restoration Projects	Capital	Northern Powell Complex Restoration	This project will restore a recently acquired parcel by the Nisqually Land Trust on the mainstem Nisqually River, just a little downstream of the confluence with Powell Creek. It will remove riprap and other structures from the property and revegetate the banks. This project is in an active channel migration zone and will allow the river to move more freely again.	2	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Water Quality, High Water Temperatures, Reduced Habitat Capacity		Riparian			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2010	Nisqually Land Trust	52000			11-MAINSTEM-1013
2	Mainstem Nisqually Restoration & Protection	Wilcox Reach Restoration & Protection	Restoration	Capital	Hahn Restoration	Restoration of the riparian buffer along a small strip of the Nisqually River mainstem on the Thurston County side downstream of the Powell Creek confluence.	2	Riparian Areas & LWD Recruitment		Riparian			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2009	Nisqually Land Trust	15000			11-MAINSTEM-1002
2	Mainstem Nisqually Restoration & Protection	Wilcox Reach Restoration & Protection	Restoration	Capital	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: mile of riverfront, at least 1 to 1 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.	2	Floodplain Connectivity & Function, Stream Flow, Water Quality, Loss of Habitat, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers		Riparian			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2012	Nisqually Land Trust	100000			11-MAINSTEM-1003
2	Mainstem Nisqually Restoration & Protection	Yelm/McKenna Shoreline Projects	Restoration	Capital	Yelm Shoreline Land Trust Restoration Project	110 acre restoration and public access project on properties now owned by the Nisqually Land Trust on the Nisqually River mainstem near Yelm on the Thurston County side. Restore along mile of river front plus a stream that accesses a large off-channel wetland. Plan and develop a day use and trail system along 1.5 miles of river.	2	Floodplain Connectivity & Function, Riparian Areas & LWD Recruitment, Reduced Habitat Capacity		Riparian			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2012	Nisqually Land Trust	200000			11-MAINSTEM-1004
4	Ohop Creek Restoration & Protection		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 salmon-bearing but unnamed tribuary.	2	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Stream Flow, Water Quality, Excessive Sediment, High Water Temperatures, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity		Wetland		protect 180 acres floodplain, 1 mile shoreline of Upper Ohop creek.	Steelhead	Cutthroat (Secondary Species), Chinook (Secondary Species), Coho (Secondary Species), Steelhead (Secondary Species)								12/31/2010	Nisqually Land Trust	800000			11-OHOP-1005
5	Nearshore Restoration & Protection		Restoration Projects	Capital	Hogum Bay 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. The project would focus mainly on riparian revegetation.	2	Riparian Areas & LWD Recruitment, Water Quality, Excessive Sediment, High Water Temperatures, Reduced Habitat Capacity		Riparian			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2012	Nisqually Land Trust	30000			11-NEARSHORE-1003
6	Small Tributary Restoration & Protection	Red Salmon Creek watershed	Acquisition for protection	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 excellent water of this stream. 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 large 40-acre tract of land at these headwaters. The Forespring Family Trust owns this land, and is willing to place a permanent conservation easement on the property to provide for its permanent protection. Specifically, the Forespring family, and the applicant, are very anxious to provide substantial and permanent protection to the headwater springs that feed Red Salmon Creek. This land is subject to considerable development pressure; the time to act is now.	2			Riparian		protect 40 acres headwaters to Red Salmon Creek, protect water quality in Red Salmon Slough estuary	Chum	Cutthroat (Secondary Species), Chinook (Secondary Species), Coho (Secondary Species)	Conceptual							12/31/2009	Nisqually R Land Trust	300000			11-RSSWASH-1002
6	Small Tributary Restoration & Protection		Restoration	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.	2	Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers		Instream			Steelhead	Cutthroat (Secondary Species), Coho (Secondary Species)								12/31/2010	Pierce County	820000			11-BRIGHTON-1001
6	Small Tributary Restoration & Protection		Restoration	Capital	Horn Creek Fish Passage Project	Replace partial fish barrier at Horn Creek. A man-made waterfall at rivermile 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.	2	Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers		Instream			Steelhead	Cutthroat (Secondary Species), Chinook (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species)								12/31/2010	South Puget Sound SEG or Pierce County	132000			11-HORNHARTS-1001
6	Small Tributary Restoration & Protection		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 areas 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.	2	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Stream Substrate, Water Quality, Excessive Sediment, High Water Temperatures, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity		Riparian		restore 3 to 5 acres a year of riparian habitat along lower Tanwax Creek.	Coho	Cutthroat (Secondary Species), Chinook (Secondary Species), Steelhead (Secondary Species)								12/31/2018	Nisqually River Foundation	96000			11-TANWAX-1001
	Nisqually Watershed-Wide Restoration & Protection	Watershed-wide Habitat Restoration and Enhancement	Restoration Projects	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	Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Stream Substrate, Stream Flow, Water Quality, Altered Stream Morphology/Stream Flow Patterns, Excessive Sediment, High Water Temperatures, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers, Reduced Habitat Capacity, Unscreened Water Diversions		Riparian			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2020	Pierce Conservation District/Thurston Conservation District	680000			11-MISC-1002
1	Estuary Restoration & Protection	Nisqually Wildlife Refuge Restoration & Protection	Restoration	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 ($25,400 starting annual cost), to conduct the monitoring program and guide treatment efforts as well as some time for a a 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.	3	Floodplain Connectivity & Function, Riparian Areas & LWD Recruitment, Water Quality		Estuary River Delta			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2020	Nisqually Wildlife Refuge	222000			11-ESTUARY-1003
2	Mainstem Nisqually Restoration & Protection		Restoration Projects	Capital	Nisqually Mainstem Land Trust Boundary Protection and Restoration	Survey and fence upland boundaries on four properties totaling 2 river miles and over 200 acres that are experiencing trespass and dumping. Remove debris and exotic plants.	3	Floodplain Connectivity & Function, Riparian Areas & LWD Recruitment, Excessive Sediment, High Water Temperatures, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity		Riparian			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2010	Nisqually Land Trust	45000			11-MISC-1005
6	Small Tributary Restoration & Protection	Red Salmon Creek watershed	Restoration Projects	Capital	Red Salmon Creek/Wash Creek Restoration - Phases IV and V	Phase IV: Weed control and fence removal along Red Salmon Creek upstream of the railroad crossing on Nisqually Land Trust properties. Phase V: planting of riparian and adjacent upland areas adjacent to salt marsh and Red Salmon Creek and tributaries upstream of the railroad crossing. Follow up maintenance.	3	Riparian Areas & LWD Recruitment, Stream Substrate, Water Quality, Excessive Sediment, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity		Riparian			Chum	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Steelhead (Secondary Species)								12/31/2011	Nisqually Land Trust	50000			11-RSSWASH-1001
6	Small Tributary Restoration & Protection		Restoration	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.	3	Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers		Instream			Steelhead	Cutthroat (Secondary Species), Chinook (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species)								12/31/2010	Pierce County	294000			11-HORNHARTS-1002
6	Small Tributary Restoration & Protection		Restoration	Capital	Lackamas Creek (Thurston Co.) Culvert Replacement	This project will replace the partial fish passage barrier under a private access road and replace it with a bottomless arch culvert or small bridge that would open up several miles of salmon habitat upstream. This project is located at RM 1.3 and is downstream of the recently replaced fish passage barrier at Bald Hills Rd at RM 1.6.	3	Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers		Instream			Steelhead	Cutthroat (Secondary Species), Chinook (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species)								12/31/2010	South Puget Sound SEG	176000			11-LACKAMAS-1001
6	Small Tributary Restoration & Protection		Restoration Projects	Capital	Powell Creek Neighborhood Road Passage Barrier	This project will replace the partial fish passage barrier under a neighborhood access road and replace it with a 50" X 14" steel bridge that will open up several miles of salmon habitat upstream. The project at RM 0.9 has received funding through the FFFPP grant program.	3	Channel Structure and Complexity, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers		Instream			Steelhead	Cutthroat (Secondary Species), Chinook (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Steelhead (Secondary Species)								12/31/2010	South Puget Sound SEG	192000			11-POWELL-1001
6	Small Tributary Restoration & Protection		Restoration Projects	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.	3	Altered Stream Morphology/Stream Flow Patterns, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers		Riparian, Instream, Wetland, Rivers/Streams/Shoreline			Coho	Cutthroat (Secondary Species), Chinook (Secondary Species), Chum (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Feasibility Pending							12/31/2011	South Puget Sound SEG	300000			11-POWELL-1004
	Nisqually Watershed-Wide Restoration & Protection	Watershed-wide Habitat Restoration and Enhancement	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	3	Water Quality, Predation/Competition/Disease, Reduced Habitat Capacity		Instream			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)								12/31/2020	Nisqually Indian Tribe	77272.5			11-MISC-1004
			Hatchery	Capital	Mainstem Weir	In order to develop a self-sustaining natural run of Nisqually Chinook, the proportion of HORs to NORs on the spawning grounds must be decreased. A seasonal weir on the lower mainstem will trap all Chinook, enabling the segregation of NORs from HORs while providing invaluable stock assessment information.						Implement and successfully operate weir to achieve 5% or best possible HOR/NOR composition on spawning grounds.	Chinook		Design Completed	Permitting	75,000	Weir Construction and Operation	1,500,000	Weir Operation		On - going	NIT				
			Future Habitat Proje	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.		Floodplain Connectivity & Function, Channel Structure and Complexity, Predation/Competition/Disease, Altered Stream Morphology/Stream Flow Patterns, Loss of Habitat, Reduced Habitat Capacity		Estuary River Delta			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)								12/31/2010	Nisqually Indian Tribe	400000			11-ESTUARY-1004
			Future Habitat Project Deve	Non-Capital	Lower Nisqually Restoration Feasibility and Design	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.		Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Altered Stream Morphology/Stream Flow Patterns, Reduced Habitat Capacity		Instream			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)								12/31/2010	Nisqually Indian Tribe	344000			11-MAINSTEM-1010
			Future Habitat Project	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.		Floodplain Connectivity & Function, Riparian Areas & LWD Recruitment, Stream Flow, Water Quality, Altered Stream Morphology/Stream Flow Patterns, Excessive Sediment, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers, Reduced Habitat Capacity		Wetland			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)								12/31/2015	South Puget Sound SEG / Nisqually Indian Tribe	93000			11-MAINSTEM-1011
			Future Habitat Proje	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 30% engineering designs.		Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Stream Substrate, Excessive Sediment, Reduced Habitat Capacity		Instream			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)								12/31/2010	Nisqually Indian Tribe	135000			11-MAINSTEM-1012
			Future Habitat Project Deve	Non-Capital	Nisqually to Pt. Defiance Nearshore Restoration Project	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 underway the cost estimate for project construction is quite rough at this point. (also listed under capital projects)		Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Water Quality, Altered Stream Morphology/Stream Flow Patterns, Excessive Sediment, Loss of Habitat, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers, Reduced Habitat Capacity		Nearshore (Beaches)			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2009	South Puget Sound SEG	1675000			11-NEARSHORE-1005
			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 a 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.		Floodplain Connectivity & Function, Channel Structure and Complexity, Riparian Areas & LWD Recruitment, Water Quality, Altered Stream Morphology/Stream Flow Patterns, High Water Temperatures, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Access to Spawning Habitat - Fish Passage/Anthropogenic/Natural Barriers, Reduced Habitat Capacity		Nearshore (Embayments)			Chum, Chinook, Coho, Cutthroat	Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species), Pacific Herring, River Lamprey, Surf Smelt, Sand Lance	Feasibility Completed							12/31/2010	South Puget Sound SEG	250000			11-NEARSHORE-1006
			Future Habitat Project Development	Non-Capital	Nearshore Restoration and Preservation Prioritization, Coordination, and Support	Nearshore restoration and protection are high priority habitat actions for the recovery of Nisqually Chinook. Implementing large scale projects in the nearshore requires extensive coordination; involving multiple landowners, industry, and public entities. This project would enable a person or persons to focus on nearshore project management in order to ensure that nearshore projects are thouroughly researched, coordinated, and strategic.							Chinook	Chum, Pink, Steelhead, Coho, Bull Trout, Cutthroat	Conceptual							On - Going	Likely sponsor not identified. A South Sound MRC could lead this effort.				
			Habitat Protection	Non-Capital	Nisqually Land Trust Property Stewardship/Natural Resource Management	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 Trusts 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 Trusts 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.		Floodplain Connectivity & Function, Riparian Areas & LWD Recruitment, Stream Substrate, Water Quality, Excessive Sediment, High Water Temperatures, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity		Riparian			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2020	Nisqually Land Trust	187500			11-MISC-1007
			Habitat Protection	Non-Capital	Protection Enforcement and Monitoring on Nisqually Land Trust Properties	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.		Floodplain Connectivity & Function, Riparian Areas & LWD Recruitment, Stream Substrate, Water Quality, Excessive Sediment, High Water Temperatures, Loss of Habitat, Loss of Tributary Habitat Diversity, Reduced Habitat Capacity		Riparian			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2020	Nisqually Land Trust	30000			11-MISC-1008
			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)		Regulatory Mechanisms		Estuary River Delta			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)								12/31/2020	Nisqually Wildlife Refuge	151500			11-ESTUARY-1005
			Habitat Protection	Non-Capital	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		Water Quality, Regulatory Mechanisms		Instream			Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)								12/31/2010	USFWS	220675			11-MISC-1009

			Habitat Protection	Non-Capital	**Thurston County CAO Revision**	Thurston County staff time to do required updates to Thurston Counties Critical Area Ordinance										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	290000				11.MISC.1010
			Habitat Protection	Non-Capital	**Thurston County Shoreline Master Program Revision**	Thurston County staff time to do required updates to the counties Shoreline Master Program										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	446000				11.MISC.1011
			Habitat Protection	Non-Capital	**Pierce County Shoreline Master Process Revision**											Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)									12/31/2030	Pierce County	0				11.MISC.1012
			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										Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)									12/31/2030	Nisqually Indian Tribe	488540				11.MISC.1014
			Habitat Project Monitoring	Non-Capital	**Ohop Monitoring Plan**	The significance of Ohop Creek for salmon recovery has prompted the Nisqually Tribe and our partners to develop a large scale restoration and protection initiative in the basin. The magnitude and importance of this initiative creates a clear need to monitor the effectiveness of our efforts for protecting and restoring Ohop Creek salmon habitat											Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)	Feasibility Complete, Plan Outline Completed	Plan Development, Initial Data Collection and Analysis	69,000	Data Collection and Analysis	90,000	Data Collection and Analysis	69,000	12/31/2018	Nisqually Indian Tribe	180000				11.CHOP.1006
			Habitat Project Monitoring	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										Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)									12/31/2030	Nisqually Indian Tribe	2983518				11.MISC.1013
			Habitat Project Monitoring	Non-Capital	**Refuge Estuary Restoration Project Monitoring**	The significance of the Nisqually River estuary for salmon recovery has prompted the Nisqually Tribe, Nisqually National Wildlife Refuge, and our partners to implement large scale restoration projects in the estuary. The magnitude and importance of the estuary restoration projects creates a clear need to monitor the effectiveness of our efforts.											Chinook	Chum, Pink, Coho, Steelhead		Feasibility Complete, Plan Outline Completed	Plan Refinement, Baseline Data Collection	1,000,000	Data Collection	1,000,000	Data Collection	1,000,000	12/31/2018	USGS, NIT, USFWS, Ducks Unlimited	3,000,000				11.ESTUARY.1006
			Habitat Project Monitoring	Non-Capital	**Monitoring of Estuary Restoration on Red Salmon Slough**	Monitoring of the physical and biological response to the 140 acres of tidal estuary restoration on the east side of the river.										Chinook	Cutthroat (Secondary Species), Chum (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Bull Trout (Secondary Species), Steelhead (Secondary Species)									12/31/2018	Nisqually Indian Tribe	174000				11.ESTUARY.1007
			Habitat Project Monitoring	Non-Capital	**Mashel Monitoring Plan**	The significance of the Mashel River for salmon recovery has prompted the Nisqually Tribe and our partners to develop a large scale restoration and protection initiative in the basin. The magnitude and importance of this initiative creates a clear need to monitor the effectiveness of our efforts for protecting and restoring Mashel River salmon habitat											Chinook	Cutthroat (Secondary Species), Coho (Secondary Species), Pink (Secondary Species), Steelhead (Secondary Species)		Data Collection and Analysis	69,000	Data Collection and Analysis	58,000	Data Collection and Analysis	41,000	12/31/2018	Nisqually Indian Tribe/SPSSEG	174,000				11.MASHEL.1004
			Habitat Project Monitoring	Non-Capital	**Nearshore Restoration Monitoring**	Nearshore restoration project treatments are relatively new and inherently experimental. This project will ensure that nearshore restoration projects are monitored sufficiently in order to assess the effectiveness of various restoration treatments											Chinook	Chum, Pink, Coho, Steelhead			Plan Development	69,000	Plan Development and Implementation	190,000	Continued Implementation	45,000	2015	SPSSEG, NIT, Skokomish, WDFW					
			Harvest Management Support	Non-Capital	**Variable Harvest and Weir Operations Schedule**	The Variable Harvest and Weir Operations Schedule will utilize pre-season forecasts and in-season run updates to guide the passage of Chinook over the weir and harvest management to ensure that escapement and NOR/HOR composition goals are met.											Chinook			Feasibility Completed	Schedule Developed	69,000	Schedule Implemented				2010	NIT					
			Harvest Management Support	Non-Capital	**Treaty Commercial Fishery Monitoring**	Monitoring the treaty commercial fishery is critical for stock assessment and adaptive management. Fishery monitoring provides fundamental data for management including but not limited to NOR and HOR abundance, timing, and composition											Chinook	Pink, Coho, Chum		On-going		100,000		100,000		100,000	On-going	NIT					
			Harvest Management Support	Non-Capital	**Testing Selective Commercial Fishing Gear**	Selective commercial fishing has the potential to increase hatchery Chinook harvest rates while decreasing impact on natural origin fish. Various commercial fishing gear types will be tested for their effectiveness in catching Chinook while giving the fisher the opportunity to segregate HORs from NORs and live release NORs											Chinook	Pink		Conceptual	Gear Purchase	100,000	Gear Test	95,000	Gear Test	60,000	2015	NIT					
			Stock Monitoring Support	Non-Capital	**EDT Habitat Attribute Updates**	EDT Habitat Attribute Updates are needed to model the response of the Chinook population to habitat changes caused by large scale habitat restoration projects. Data from various monitoring and assessment projects will be synthesized and used to run the model updates. Model updates will be coordinated with major adaptive management cycles (every 2 years)											Chinook				Model Updates	69,000	Database maintenance	20,000	Model Updates	44,100		NIT					
			Stock Monitoring Support	Non-Capital	**Chinook Spawner Surveys (mainstem, mashel, ohop, ortatine creek)**	Chinook spawner surveys are essential for determining the abundance, spatial and temporal distribution, and composition of spawning Chinook										Chinook	Pink, Coho		Surveys on-going, would be expanded	Survey	69,000	Survey	47,000	Survey	44,100	on-going	NIT, WDFW					
			Stock Monitoring Support	Non-Capital	**Downstream Migrant Trapping**	WDFW installed a downstream migrant trap on the Nisqually River in January 2009. The trap will enable managers to determine the abundance, timing, and diversity of migrating juvenile salmonids. When combined with adult spawner abundance the trap will also give us the ability to estimate the productivity of the watershed											Chinook, Steelhead	Chum, Pink, Coho		1st Season Implemented	Trap Operations	125,000	Trap Operations	125,000	Trap Operations	125,000	on-going	WDFW					
			Stock Monitoring Support	Non-Capital	**Otolith Analysis**	Chinook otolith analysis provides key information on Chinook life history diversity including growth and residency in key habitats like the estuary										Chinook			on-going	Analysis of adult otoliths	100,000	Analysis of adult otoliths	100,000	Analysis of adult otoliths	100,000	on-going	USGS, NIT, USFWS Nisqually/NWR					
			Stock Monitoring Support	Non-Capital	**Steelhead Spawner Surveys (mainstem, mashel, ohop, ortatine creek)**	Steelhead spawner surveys are essential for determining the abundance, spatial and temporal distribution, and composition of spawning steelhead										Steelhead			Surveys on-going, would be expanded	Survey	69,000	Survey	47,000	Survey	44,100	on-going	NIT, WDFW					
			Stock Monitoring Support	Non-Capital	**DIDSON Counter @ Centralia Diversion Dam**	All salmon, including Chinook and steelhead, that spawn in the upper Nisqually River and in Ohop Creek and the Mashel River must swim through the fish ladder at the Centralia Diversion Dam. This creates an opportunity to install a sonar fish counter. A fish counter will provide invaluable stock assessment data, especially for steelhead that run at a time of high turbidity in the Nisqually River which prevents accurate spawner counts.													Install sonar and get accurate counts of fish moving through fish ladder	Steelhead	Chinook, Coho, Chum, Pink		Conceptual	Purchase and Install DIDSON	200,000	Operate DIDSON	60,000	Operate DIDSON	60,000	None	NIT					
			Research	Non-Capital	**Steelhead Acoustic Tracking**	Puget Sound steelhead were listed as threatened in 2007. Preliminary information suggests that steelhead are experiencing poor survival as they migrate through Puget Sound. This project utilizes acoustic tags and receivers to track individual steelhead as they move through the lower Nisqually river, estuary, and Puget Sound in order to determine migration patterns and survival.											Steelhead			On-going	tag >50 steelhead	59,000	tag >50 steelhead	61,000			2010	NIT					
			Watershed Plan Implementation & Coordination	Non-Capital	**Adaptive Management Plan Implementation**	The Nisqually Chinook Adaptive Management Framework Implementation Project will provide the population modeling, habitat characterization, and stock status update support necessary to complete an adaptive management cycle.											Chinook				Plan Development and model runs	69,000	Plan refinement	60,000	Major Adaptive Management Update	85,000	On - going	NIT					
			Watershed Plan Implementation & Coordination	Non-Capital	**In-stream, off-channel, and estuary habitat project Restoration Biologist**															1 FTE (including 54% indirect)	$105,000	1 FTE (including 54% indirect)	$110,000	1 FTE (including 54% indirect)	$113,300		Nisqually Tribe	$328,300				
			Watershed Plan Implementation & Coordination	Non-Capital	**Salmon RecoveryProject Technician**															.5 FTE (including 54% indirect)	$85,825	.5 FTE (including 54% indirect)	$87,486	.5 FTE (including 54% indirect)	$43,720		Nisqually Tribe	$126,581				
			Watershed Plan Implementation & Coordination	Non-Capital	**Lead entity coordinator/Salmon Recovery Program Management**															Staffing (1 FTE + 54% indirect)	$124,740	Staffing (1 FTE + 54% indirect)	$129,360	Staffing (1 FTE + 54% indirect)	$133,241		Nisqually Tribe	$387,341				
			Watershed Plan Implementation & Coordination	Non-Capital	**GIS support for plan development/implementation**															Staffing (1 FTE + 54% indirect)	$124,740	Staffing (1 FTE + 54% indirect)	$129,360	Staffing (1 FTE + 54% indirect)	$133,241		Nisqually Tribe	$387,341				
			Watershed Plan Implementation & Coordination	Non-Capital	**Development and Coordination of Adaptive Management Program**															Staffing (1 FTE + 54% indirect)	$118,580	Staffing (1 FTE + 54% indirect)	$123,200	Staffing (1 FTE + 54% indirect)	$126,896		Nisqually Tribe	$368,676				
			Watershed Plan Implementation & Coordination	Non-Capital	**Identify and research key uncertainties to improve plan**															Staffing (1 FTE + 54% indirect)	$118,580	Staffing (1 FTE + 54% indirect)	$123,200	Staffing (1 FTE + 54% indirect)	$126,896		Nisqually Tribe	$368,676				

			Watershed Plan Implementation & Coordination	Non-Capital	**complete Adaptive Management plan and database**													complete structure, tracking database	$75,000											
			Watershed Plan Implementation & Coordination	Non-Capital	**Adaptive Management database**															update, adjust structure	$75,000	1 FTE data manager, database maintenance costs, maintenance, data input	$126,000	1 FTE data manager, database maintenance costs, maintenance, data input	$129,780		Nisqually Tribe	$100,000				
			Outreach & Education	Non-Capital	**Nisqually National Wildlife Refuge Education Program (obj. 3.1, Goal III)**	Conduct environmental education program at Nisqually NWR to serve up to 15,000 students annually.												outreach and education	$75,000	outreach and education	$79,000		$82,000	on-going	USFWS	$237,000	$30,000	Friends of Nisqually NWR, USFWS	
			Outreach & Education	Non-Capital	**Nisqually River Education Project**	outreach and education for K-12 students in the Nisqually watershed												1 FTE plus program costs	$90,000	1 FTE plus program costs	$90,000	1 FTE plus program costs	$90,000	on-going	Nisqually River Foundati	$130,000	$140,000	City of Yelm, Dept. of Ecology, EPA, NPNP, Nisqually Indian Tribe, Pierce Co. Thurston Co.	
			Outreach & Education	Non-Capital	**Nisqually Stream Stewards**	outreach and education for all residents in the Nisqually watershed and surrounding areas												1 FTE plus program costs	$150,000	1 FTE plus program costs	$125,000	1 FTE plus program costs	$130,000	on-going	Nisqually Tribe	$225,000	$100,000	Nisqually Tribe, WDFW	
			Other	Non-Capital	**Implementation/Effectiveness/Validation Monitoring**	Coordination of monitoring of overall recovery plan												Monitoring of projects / plan	$66,150	Monitoring of projects / plan	$67,741	Monitoring of projects / plan	$69,173	on-going	Nisqually Tribe	$143,263		Nisqually Tribe	
			Other	Non-Capital	**Nisqually Land Trust administrative/facilities support**	Nisqually Land Trust program support is critical for the continued operation of the land trust and the fulfillment of its mission. The Nisqually Land Trust is the major organization working on salmon habitat protection in the Nisqually basin													$50,000		$50,000		$50,000	ongoing	Nisqually Land Trust	$127,500	$37,500		
			Other	Non-Capital	**Nisqually River Council Support**	Staffing of Nisqually River Council, Watershed Festival, newsletters, and subcommittees													$100,000		$100,000		$100,000		Nisqually River Foundation	$0	$100,000	WA Dept of Ecology	
			Other	Non-Capital	**Nisqually Sustainable Initiative**	Marketing of sustainable local businesses												Development	$100,000	Implement	$100,000	Implement	$100,000		Nisqually River Foundation	$217,000	$681,000	EPA	
			Other	Non-Capital	**Nisqually Low Impact Development**	Implementation of Low Impact Development projects in the Nisqually watershed												FTE Implement	$75,000	FTE Implement	$75,000	FTE Implement	$75,000		Nisqually River Foundation	$175,000	$100,000	WA Dept of Ecology	
			Other	Non-Capital	**Nisqually Water Conservation**	Write conservation plans for Class A water purveyors in the Nisqually Watershed												Draft write plans	$100,000	Implement plans	$50,000				Nisqually River Foundation	$0	$100,000	WA Dept of Ecology	
			Other	Non-Capital	**Multispecies Nisqually Salmon Plan**	Utilize EDT and other models to publish a multi-species Nisqually salmon recovery plan that addresses all four 4 H's. This includes formulation of goals, objectives and an actions plan to restore salmon runs to PFC												coordinate plan development, work with contractor to model conditions, scenarios, develop options	$75,000	coordinate plan development, work with contractor to model conditions, scenarios, develop options	$75,000			2009	Tribe	$150,000			

South Puget Sound 3-Year Priority Project List

The Excel spreadsheet lists the 3 year project list for the South Puget Sound action area. This is defined as the marine waters south of the Tacoma Narrows and all freshwater sources flowing into them.

The term “South Sound” refers to a geographical location. Numerous non-governmental and governmental entities have coalesced around this geographic area and agreed to cooperatively identify, prioritize, and implement projects on the list. However, the only legislatively mandated group recognized for administering funds is the Water Resource Inventory Areas, the WRIA. Because of this constraint the information in the spreadsheet is displayed for each of the WRIA’s in South Sound.

The projects presented are the highest priority projects in each WRIA as designated by the technical and citizens committee for that WRIA.