Stillaguamish Salmon Recovery 3-Year Work Plan: 2011-2013

Summary of changes from 2010 to 2011 Update

Prepared by the Stillaguamish Tribe - 3/23/11

Overview:

The 2011-2013 Stillaguamish Salmon Recovery 3-YearWork Plan consists of the restoration and protection projects that have been submitted by stakeholders and watershed partners throughout the Stillaguamish Basin. In particular, the capital projects on the list are essential to the overall recovery of Chinook salmon as outlined in the 2005 Stillaguamish Chinook Salmon Recovery Plan. This work plan has been endorsed by the Stillaguamish Watershed Council (SWC, formerly the Stillaguamish Implementation and Review Committee (SIRC)), as well as, the NOAA Review and Implementation Technical Team (RITT), and the Salmon Recovery Funding Board (SRFB). The habitat portion of the plan is organized by limiting factors determined to limit Chinook production in the Stillaguamish watershed. The Chinook Recovery Plan strives to integrate harvest, hatchery and habitat actions as outlined on Page 87, as a means to increase production to sustainable and harvestable levels.

Habitat

The primary habitat limiting factors and the actions needed to recover Stillaguamish Chinook include:

<u>Riparian:</u> Plant native riparian vegetation, exclude livestock, protect existing native riparian vegetation, and control non-native invasive plants. Riparian actions during the first 10 years of the plan are focused on restoring 400 acres of riparian forest on rural, urban, and agricultural lands that are not governed by existing local, state, or federal forest regulations. The highest priority riparian areas include the Upper North Fork Stillaguamish, Squire Creek, French-Segelsen, Lower Canyon Creek, and the Lower South Fork Stillaguamish sub-basins. The second highest priority riparian area includes the Middle North Fork Stillaguamish, the Lower North Fork Stillaguamish, Jim Creek, and Lower Pilchuck Creek sub-basins. The plan defers to the existing regulatory framework for riparian forest management on private, state, and federal forestlands.

<u>Estuary/Nearshore</u>: Restore blind tidal channels and tidal marsh habitats by removing and/or setting back dikes, restore pocket estuaries, restore or enhance marine shoreline habitat by removing bulkheads and planting native vegetation, retrofit existing tide gates, and develop complexity to enhance tidal channel formation in the river delta. Estuary and marine nearshore restoration actions are focused on three primary locations. These include restoration of 115 acres of tidal marsh habitat on WDFW's, Leque Island property, restoration of 150 acres of tidal marsh habitat on The Nature Conservancy's property adjacent to the mouth of Hatt Slough, and creation of 120 acres of new tidal marsh habitat by removing spartina infestations and adding roughened features to the mud/sand flats in front of the mouth of Hat Slough. The estuary/nearshore targets are in the process of being refined based on the work of Collins et al. 2010-2011 (unpublished

data). This work will break out salt marsh restoration into specific habitat types needed to enhance Chinook recovery over the 50-year life of this recovery plan.

<u>Large Woody Debris</u>: Install engineered log jams and large wood complexes in main river channels and large tributaries, stabilize eroding stream banks and landslides using large wood revetments and/or jams, and regenerate mature riparian trees for future instream recruitment. Specific actions to supplement large instream wood include installation of 51 engineered log-jams within specific reaches of the North and South Forks. These reaches have relatively unmodified banks and are therefore expected to be more responsive to the floodplain and channel morphological effects of large instream wood

<u>Floodplain:</u> Reconnect main river channels with side channels and sloughs, reconnect main river channels with floodplains and forested wetlands, remove and/or set back dikes and levees, and remove bank armoring. Specific floodplain improvements include restoration of side channel habitat in the Lower Stillaguamish, Lower North Fork Stillaguamish, Middle North Fork Stillaguamish, and Lower South Fork Stillaguamish sub-basins. Removal of 4.1 miles of bank armoring is also prescribed for reaches above the confluence of the north and south forks of the Stillaguamish River.

<u>Sediment:</u> Stabilize large deep-seated landslides along main river channels using large wood revetments and/or log jams, decommission and treat forest roads, restore wetlands to stabilize small tributary sediment regimes. Specific actions to reduce sediment impacts include remediation of the large deep-seated landslides at Steelhead Haven and Gold Basin and treatment of 106 miles of forest roads in the Upper North Fork, French-Segelsen, Deer Creek, Middle North Fork Stillaguamish, Upper Canyon Creek, Robe Valley, and Lower Canyon Creek sub-basins.

<u>Hydrology:</u> Restore floodplains to reduce peak flow and low flow impacts, reduce forest road density, increase hydrologically mature forest cover, identify optimum instream flow levels and take actions necessary to reduce water consumption. Riparian vegetation, floodplain, wetland, and sediment projects should also contribute to restoring and protecting hydrologic functions. Recently the Stillaguamish Tribe received an EPA Grant to analyze the cause of increasing peak flows in both the North and South Fork watersheds. The Tribe is partnering with NOAA Fisheries Science Center, Cascade Land Conservancy, and Snohomish County to answer this question.

Secondary limiting factors and actions needed to recover Stillaguamish Chinook include:

Fish Passage and Barrier Removal: Reconnect habitat that has been disconnected from natural processes by anthropocentric actions such as dikes and levees, tide gates, dams, roads, and railway berms. Remove undersized and/or blocking culverts, bridges, and fishways.

<u>Water Quality and Quantity</u>: Take actions necessary to restore ecosystem functions that reduce temperature, increase dissolved oxygen and reduce fine sediment and turbidity

from tributaries and mainstem reaches. Ensure the Stillaguamish Instream Flow rule is fully implemented and that adequate flows are protected for the instream needs of salmon. Further work is needed to determine if the purchasing/leasing of water rights can be used as a tool to restore/protect instream flows. Washington Department of Ecology is currently implementing a TMDL for water quality issues throughout the Stillaguamish Watershed. The Puget Sound Partnership is also spearheading an effort to integrate salmon recovery with water quality and quantity to recover the Puget Sound Ecosystem.

Harvest

The 2005 Stillaguamish Chinook Recovery Plan states, that "Washington Co-Managers have set an exploitation rate of 25% for the Stillaguamish Chinook salmon management unit." According to the simulation model, this level of exploitation affords a 92% probability of recovery and a 4% risk of the management unit falling below the critical escapement threshold of 500.

It is the goal of the SWC that the exploitation rate on Stillaguamish Chinook salmon stay at or below 25%.

<u>Hatchery</u>

There are currently supplemental brood stock programs on both the North and South Forks of the Stillaguamish. The intent of the program is to help restore the listed populations, and release sub-yearling North and South Fork Stillaguamish origin fish each year. Specific performance measures for the program include: 1) initially maintain and then increase the total abundance of the composite natural/hatchery Chinook salmon populations; 2) as habitat improves, increase the ratio of natural origin spawners vs. hatchery origin spawners on the spawning grounds; 3) produce hatchery reared fish that are similar to natural origin fish in morphological and life history traits; 4) maintain the genetic diversity of the population.

Progress on 2010 – 2012 Stillaguamish Salmon Recovery Work Plan

During the 2010 - 2011 field seasons it is anticipated that several projects on the 3year work plan will be completed or well underway, notwithstanding monitoring and maintenance. Projects completed during the 2010 field season include: the Lower Pilchuck Wetland Restoration, Blue Slough Channel Reconnection Phase III, and ELJ Placement on the North Fork. On-going projects include: the installation of ELJ's on the South Fork, the South fork and North Fork Big Tree Installation, Knotweed and Spartina invasive species control, and the Leque Island and TNC Dike Removal (see concerns regarding farmland and estuary restoration). Several large-scale reconnection and restoration projects have begun preliminary feasibility and design such as Gold Basin, South Slough and South Meander. There are many projects ongoing related to fish passage, hatchery, harvest, and outreach and education, monitoring and adaptive management and watershed coordination that continue to show annual progress.

3 Year Workplan Organization

The 2011 work plan follows the same format as earlier versions. By capturing the major habitat limiting factors and the targets for 10 years of recovery in each category we can calculate work done to date by adding completed project performance measures, (e.g. linear miles or acres of riparian planted). The amount of each target still remaining should be useful guidance for sponsors wanting to do worthwhile recovery projects that will do the most good for Chinook salmon (e.g. Riparian 10 Year target 400 acres planted (2005-2009) 200 acres planted. Therefore (2010-2014) will need 200 more acres planted.

The current format is still a work in progress, and will be evaluated each year during the work plan update. There are stakeholders in the SWC that prefer the original format of listing all potential (no matter if they may or may not be undertaken in a given three year window) salmon recovery projects in the document. The lead entity and SWC need to determine which method is most useful for potential project sponsors, the PSP and RITT, as well as for carrying out implementation of the WRIA 5 Chinook Salmon Recovery Plan. Again, this will be evaluated during subsequent 3-year work plan updates.

It is important to understand that not all projects contributing towards the Recovery plan goals are listed in the 3-year workplan proposed projects. Stakeholders may have projects that will contribute to the goals but are not tied to SRFB or Puget Sound Partnership process approval. The total under completed project in the spreadsheet may reflect those projects that were independently funded.

Table 1. Breakdown of 2011-2013 3-year work plan needs by capital and non-capital subcategories.

Capital Projects	Units	10 Year Goal	Progress since 2005	Progress Notes	10-Year Goal Remaining	Three Year Funding Needed
110jeeus		Gour	SINCE 2000	Trend of decreasing near	- Trumum g	r unung recucu
				stream forest cover observed		
Riparian	Acres	400	277	(Purser and Simmonds 2008)	123	\$652,078
Estuary/				Leque stalled, awaiting		
Nearshore	Acres	315	0	groundwater study results	315	\$3,392,550
				Wood removed by		
I W		5.1		homeowners/local	42	\$1,075,000
Large Wood		51	8	jurisdictions not quantified	43	\$1,075,000
Floodplain	Acres	30	6.7	Blue Slough re-connected	23.3	\$1,688,085
	Miles					
	Armoring					
	removed	4.1	-0.4	0.43 miles added	4.53	\$878,850
	Main			Steelhead Haven treated.		
	Major Landslide			New landslide @ Trangen Meander not reflected in		
Sediment	Treatments	2	1	plan.	1.5?	\$1,431,818
Scament	Treatments		1	piuri.	1.5:	ψ1,131,010
			Plan metrics			
	Forest Road		need			
	Treatments	106	reworking	Plan metrics in revision	?	?
				Stakeholder observation is		
				that acquisition is not keeping		
				pace with subdivision and		
Acquisition	Acres	1445	551.35	development.	893.65	\$6,474,494
				Total Capital (3 yr)		\$15,592,876
		Non	Conital Nac	ds for the Next Three Years		\$13,372,070
Hatahawi	n ro orono	1101	Capital Nee	us for the Next Three Tears		\$220,700
Hatchery	program					\$329,700
Harvest	program					\$9,600
Protection	program					\$1,450,000
Stewardship	program					\$1,517,980
M&AM	program					\$3,973,225
Strategic						.
Planning	program					\$54,750
Watershed						4.0
Coordination	program					\$0
				Total Non-Capital (3 year)		\$7,335,255
				G IT (I		maa nan 420
				Grand Total		\$22,928,130

Updated response to recent (2010) TRT Comments

The SWC recognizes that recovery will entail more than restorative actions/projects, and that protecting habitat (through a variety of pathways not limited to acquisition) is central to implementation of the Chinook plan and the Action Agenda. While individual watershed partners track and comment on local government regulations such as Critical Area Regulations, Shoreline Master Plan/Comprehensive Plan updates, and development applications, the SWC does not have the jurisdiction or authority to require that existing codes are consistent with our Chinook Recovery Plan. The Stillaguamish plan clearly states that we do not feel Stillaguamish Chinook Salmon will achieve recovery without major regulatory changes made at the State and Federal levels. Many of our biggest hurdles to recovery need regional action.

The Stillaguamish watershed is actively working to reduce sediment inputs in the headwaters from landslide and road activities. At the same time efforts are underway to begin to remove some hardened banks allowing both the estuary and floodplain to recapture historic habitat. We currently are carrying out projects throughout the watershed, which combine salmon recovery with water quality and water quantity benefits. The efforts to implement a TMDL, In-stream Flow regulations and a salmon recovery plan are occurring simultaneously. Restoring floodplain and hydrologic function is a primary example of the need to develop regional protection guidelines for actions beyond the scope of an individual watershed. Bank armoring and floodplain developments have to be addressed as impediments to recovering Stillaguamish Chinook salmon. Future development should not occur in the floodplain or impinge on critical ecosystem processes. Recently, Snohomish County updated their Shoreline Master Plan and submitted it for review to the Department of Ecology. The Cities of Arlington and Stanwood are currently in the process of completing their shoreline plans with expected approval by the end of 2011. The City of Arlington presented their SMP update to the TAG for review and comment

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 Stillaguamish watershed 3-year work plan process does not have a screen or filter to prioritize or eliminate projects on the front end. It has been our philosophy to allow the local ranking and state review process to determine the relative priority of proposed projects in a given year. With that said, all our project sponsors and partners are aware of the critical limiting factors effecting Chinook production, and are advised to consult the Stillaguamish Chinook Recovery Plan for fit with the watershed strategy. On the 3-year workplan, projects are categorized within each of the six limiting factors. Over the past decade, the watershed strategy has been to not prioritize between habitat limiting factors as it was and is felt that the interaction of the major limiting factors are all interwoven and equally important to the various life stages of Chinook. However, there is still a need to address factors beyond our authority; factors that limit our ability to carry out actions needed to recover Chinook salmon, such as: hardened bank removal, reduction in the

magnitude and frequency of peak flows, and the reconnection of the main-stem river to its floodplain. Several projects or suites of projects are underway to reduce sediment, restore riparian areas, control invasive species, reconnect side channel habitat, and the installation of Engineered Log Jams (ELJ's) to both the North and South Forks (shaded in green on spreadsheet).

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

Projects on the Stillaguamish 3year work plan are a mix of large capital, small-scale capital and non-capital. Depending on which limiting factor is being addressed there is positive movement of select habitat improvement on a trajectory that could reach the tenyear goal in time. Riparian restoration and sediment reduction are examples of actions moving forward as planned. Removal of hardened banks and reconnection of the river to its floodplain are examples of actions that are not on target, and are actually losing ground with increased bank hardening and development in the floodplain. Placement of large wood is moving forward but not as quickly as planned. Time has been taken to develop a prioritization plan for locating wood, riparian, side channel reconnection and cold water inputs.

Peak flows continue to be an important factor affecting freshwater productivity (trend is for increasing magnitude and frequency) as a new record was set on the NF in Dec 2010. Smolt trap data indicates that there has been roughly 30% reduction in freshwater survival over the past several decades (Griffith et al. 2010). Although it is unclear what is driving the trend of increasing peak flows (we are investigating with EPA funds), floodplain restoration along with some alterations of timber harvest regulations are probable steps that could help mitigate some of the effects of high flows on fish. Climate change may be the largest driver, however, and that is an issue much beyond the scale of the Stillaguamish watershed.

3). What is the general status of implementation towards your habitat restoration, habitat protection, harvest management, and hatchery management goals?

This could be determined by reviewing the 2009 Monitoring and Adaptive Management Report. Unfortunately, the completion of that report does not coincide directly with the 3-Year work plan update schedule. Efforts are underway to modify the schedule of the 3 Year Work Plan submission to the State and Federal reviewers to help spread the workload throughout the year and line up the 3 major watershed tasks (3 Year Work Plan, Monitoring and Adaptive Management Annual Report and the Salmon Recovery Funding Board Grant Process. We will include a draft copy of the 2009 M&AM report which addresses harvest, hatchery and habitat progress. By using an integration process to link habitat to harvest and hatchery actions we can adjust our trajectory to meet changing conditions. Projects on the 3year work plan include a multitude of priorities from the highest to the lowest. All projects should be linked to the priorities in the Chinook Recovery Plan. The ultimate goal of the 3year plan is to develop an inclusive list of projects that protect and restore Chinook habitat throughout the Stillaguamish basin. The

projects funded under each limiting factor are prioritized during local evaluation. The watershed goal is to maintain maximum flexibility as projects become available throughout the funding cycle. Properties go on the market, available matching funds have limitations, or catastrophic events occur that may cause an immediate shift in priorities. The 3year work plan has, up to the present, been used primarily for SRFB and DOE Centennial project funding. It is a goal to make the project list a universal document that can steer potential sponsors to numerous funding opportunities outside of traditional sources. This change or opportunity should become available over the coming year through use of the Habitat Work Schedule. A prioritization scheme or strategy is already incorporated into the Chinook Recovery Plan. Currently the thinking at the watershed is prioritization will occur within each of the limiting factors but not between factors. If current or future research indicates a definitive bottleneck, highlighting one of our existing limiting factors, this strategy will be adjusted accordingly.

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?

Our implementation priorities are again based on the six habitat limiting factors (and associated geographic priority areas) we feel are limiting production of Stillaguamish Chinook. These factors are currently equally weighted as we feel there is a need to implement them all in order to bring about meaningful restoration and protection addressing all life stages. We are implementing actions that have concurrence and willing landowners at this time. These actions include riparian planting, large wood placement, landslide and road treatment to reduce fine sediment input, wetland restoration and control of invasive species. Currently there are non-capital projects on the list that include harvest, hatchery, monitoring, and education and outreach that would not typically be funded under existing SRFB guidelines and priorities. Had it not been for the continued PSAR funding from the governor and legislature our highest priority SF Chinook Supplementation Project would not have been funded in 2007. Our Stillaguamish Chinook Recovery Plan describes in detail how our harvest, hatchery and habitat are integrated to bring about recovery. If H-Integration is truly a concept that the federal and state government support then funding should be adjusted to implement projects in all categories.

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 and why?

There are no dramatic changes in the strategy or approach from previous years or the original Stillaguamish Chinook Salmon Recovery Plan in 2005. Our goal has been to use the habitat limiting factors, believed to be the cause of reduced Chinook production, in conjunction with harvest and hatchery actions to bring about recovery to harvestable levels of fish. During the 2009-2010 time period there has been a dramatic increase in the amount of acquisition occurring throughout the Stillaguamish watershed. The Cascade

Land Conservancy and the Stillaguamish Tribe have partnered on acquiring approximately 123 acres on the North Fork. The Tribe recently applied for and received a SRFB grant to purchase 60 acres on the South Fork Stillaguamish. The City of Arlington purchased 138 acres on the South Fork and is changing the zoning from residential to open space uses. All the above properties have riverfront: including a channel migration zone and an active riparian zone.

6. What is the status or trends of habitat and salmon production in your watershed Natural escapement of both North Fork and South Fork Stillaguamish Chinook salmon has remained relatively steady since the 1970s (Fig. 1).

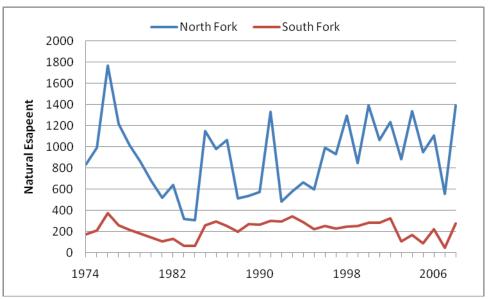


Figure 1. Natural escapement of North Fork and South Fork Stillaguamish Chinook salmon, 1974-2008. Fish removed for hatchery broodstock are not included in these figures. SOURCE: WDFW spawning escapement surveys.

The natural origin portion of the natural escapement shows a similar pattern, although there appears to be a long-term steady decline in the South Fork since the mid-1990s and evidence of a progressive increase in North Fork NOR escapement during that period, except for 2006 and 2007 (Fig. 2).

Because exploitation rates on Stillaguamish Chinook have continued to decrease (Fig. 3) without a corresponding increase in escapement, we conclude that the productivity and capacity of habitat supporting chinook salmon in the Stillaguamish basin continues to decline, or certainly is not improving.

The continued decline in the natural origin portion of the South Fork population, combined with recent genetic evidence that this group remains a unique population, has resulted in the evaluation of a captive brood program to prevent extinction of this population.

Trends in habitat are more difficult to measure, however land cover analysis has shown an overall reduction in mature forest cover across the watershed from 1991-2006 (Purser and Simmonds 2008). In addition, there has been an increase in bank armoring since 2005 (from SWC M&AM reports from the last few years- based on local observation and WDFW permits). Anecdotally, stakeholders have observed development and conversion across the floodplain since the Chinook plan was adopted, though this is more difficult to quantify.

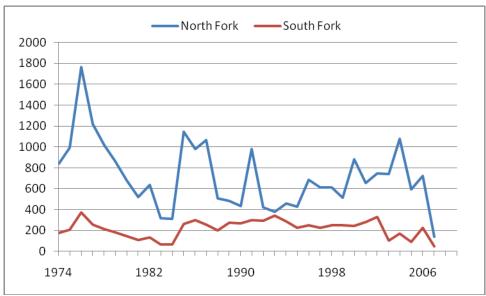


Figure 2. North Fork and South Fork Stillaguamish natural origin Chinook escapement, 1974-2007. Does not include fish removed for hatchery broodstock. SOURCE: Sampling data form the Stillaguamish Tribe applied to total escapement estimates in Fig. 1.

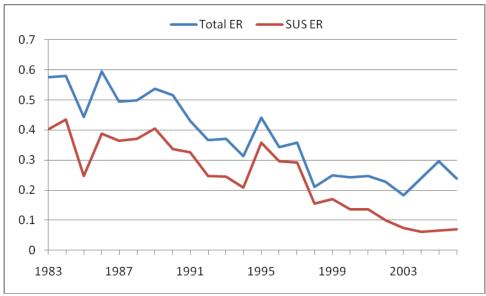


Figure 3. Annual exploitation rate on Stillaguamish Chinook salmon as measured by post-season FRAM runs, 1983-2006. "Total ER" is the estimate of the fraction that the potential escapement was reduced by all sources of fishery-related mortality. "SUS ER" is the part of that that occurred in United States waters

south of the southern United States- Canada border. SOURCE: Northwest Indian Fisheries Commission and WDFW post-season FRAM runs, 2007.

We are seeing use of ELJ projects by Chinook as well as an increase in spawning downstream of the Steelhead Haven Landslide Remediation Project. Up to 100 redds were seen downstream of the landslide for the first time in several decades. It is far too early in the recovery process to detect a trend in actual fish numbers. Primarily fish are redistributing themselves throughout the watershed as conditions begin to improve. The South Fork Chinook population continues to be depressed. Spawning escapement has ranged from 43 up to 200-300 fish over the past several years. A brood stock program is being established by the Stillaguamish Tribe to supplement the natural spawning population with fish reared and released during normal out migration timing.

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

Currently we are working with EPA/NOAA/CLC to investigate the factors behind the trend of increasing peak flows, tentatively thought to be controlled by climatic and land use factors. Impacts from peak flows have been devastating to eggs and fry in the gravel. Monitoring out migration at our downstream smolt trap shows dramatic reductions in Chinook production during years of high peak flows, which are recurring much more frequently than in decades past. Solutions need to be found to reduce/mitigate downstream impacts.

Secondly, we are faced with a new hurdle to implementing salmon recovery projects. Snohomish County now requires restoration project proponents to go before the Agricultural Advisory Board with any project that may potentially impact farmland. This board is advisory to the County Council and makes recommendations concerning agricultural lands and potential impacts. Their current focus seems to be primarily on salmon projects, while subdivision or potential development of farmland does not appear to receive similar scrutiny. While the Snohomish County executive has talked of "balancing" fish and farms, there is not an analogous process in place where proposed farm projects are brought before the SWC for an assessment of the potential impacts to Stillaguamish fish and wildlife populations- even though farms are currently exempt from most critical area regulations. The local farm bureau has also taken a stance of no-netloss of Agricultural ground, complicating the implementation of restoration projects aimed at restoring floodplain and estuary habitat in the Stillaguamish.

The Snohomish County Executive has recently established the Sustainable Land Strategy (SLS) to tackle the issue of agricultural and fish land use issues. The executive committee of SLS is made up of eight members appointed by the County including four agricultural members, two Tribal leaders, Futurewise/Pilchuck Audubon and the Cascade Land Conservancy. Their goal is to increase both agricultural productivity and ecosystem function throughout Snohomish County with a focus on the estuaries. This is a daunting task with a short timeline. Future efforts will ideally refine the SLS process to allow salmon restoration and protection efforts to proceed, while at the same time increasing

the productivity of agricultural lands in a manner compatible with ecosystem recovery. Time will tell.

The SWC could use assistance from the PSP and NOAA Fisheries to get the general (i.e. not project specific) Ag/Fish conflict resolved as soon as possible. The tribal position is that food is food, and restoration of fish and wildlife habitat should be treated the same as agricultural practices, while many (but not all) in the farming community view fish and wildlife projects as a threat to traditional agricultural practices. The PSP has provided significant assistance in resolving issues related to the estuary restoration project at Leque Island, and could continue to help with the broader issue. For Leque in particular, there has been opposition from the local Farm Bureau, waterfowl hunters, bird watching interests, and, most recently, the drinking water associations on Camano Island. The SWC will continue to try to resolve the issues preventing recovery from happening, but these conflicts are slowing the pace of recovery efforts in the watershed.

It has been pointed out by the Stillaguamish Flood Control District, that any removal of bank armoring should be well thought out and could exacerbate conditions leading to increased erosion and destruction of existing infrastructure. In order to complete the floodplain bank armor removal goal as outlined in our Chinook Salmon Recovery Plan we need to remove armoring and allow the river to recapture a portion of its historic floodplain. In some cases, we must seek to find creative solutions that could combine salmon restoration and flood management. Another area of concern from the flood control district (and others) is the acquisition of land for protection with little or no funding for stewardship, maintenance or restoration. This is an on-going problem that again needs a regional fix.

Taken together, the challenges facing the watershed indicate a society that hasn't fully embraced what significant habitat restoration looks like on the ground. The Stillaguamish Chinook plan lays out a vision that would restore thousands of acres of floodplain, estuary, and upland habitats- and backs that vision with data documenting the problems, and quantifying habitat needed to achieve the NOAA/TRT recovery targets. However, due to the resistance we consistently see for major projects, and the lack of grant funding coming to the watershed to comprehensively implement the plan, we feel that the PSP and others (including ourselves) could do a better job of marketing the message to the greater Puget Sound populace and beyond.

References:

Griffith, J, and R. VanArman. December 2010. Annual Report 2009, Stillaguamish River Smolt Trapping Project. Stillaguamish Tribe of Indians. Arlington, WA. www.stillaguamish.nsn.us

Purser and Simmonds. 2008. Land Cover Model of Snohomish County Area from September 2006 Landsat 5 Imagery. Snohomish County Public Works, Surface Water Management Division. Everett, WA.

Three-Year Stillaguamish Salmon Recovery Work Plan: 2011 - 2013

Capital projects and programs

Capital Projects from Plan

Funded 2005-date

Proposed/Pending Funding

ID	Project Type/Name	Units	Quantity	Sponsor	Project/Program Status	Cost/Unit	Total Cost for 10 Year Goal	Next 3 Year Cost	2011	2012	2013
10	Project Type/Name	Acres planted (In	Qualitity	Sponsor	Status	COST/ OTHE	rear doar	Next 5 Teal Cost	2011	2012	2015
1	Riparian	priority areas)	400	Many	10 year Goal	\$8,836	\$3,534,300	\$652,078	\$217,359	\$217,359	\$217,359
					Needs additional funding						
2	Banksavers Inmate Crew	acres	210	Stillaguamish Tribe	to continue			\$600,000	\$200,000	\$200,000	\$200,000
3	Miscellaneous local planting efforts	acros	40	Various	Complete						
4	South Fork Big Trees			SnoCo	ongoing						
5	North Fork Big Trees			SnoCo	ongoing						
	Mainstem Big Trees	acres	[20]	SnoCo	Proposed			\$300,000	\$100,000	\$100,000	\$100,000
		Acres	277								
	Total 10 year Target Amount Remaining	Acres	123								
	North Fork and Tributary Goal										
	remaining	Acres	53								
	South Fork, Tributaries, and		25.7								
	Pilchuck Goal Remaining	Acres	25.7								
	Mainstem Goal Remaining	Acres	44.3								
	rianistem Goal Remaining										
		Acres tidal marsh		TNC, Tribes, WDFW,							
6	Estuary			Counties	10 year Goal	\$24,150	\$4,709,250	\$2,825,550	\$941,850	\$941,850	\$941,850
7		Acres tidal marsh		TNC, Tribes, WDFW,	10	47.07F	40.45.000	* F67.000	±100.000	±1.00,000	±100.000
7		created	120	Counties	10 year Goal Funding likely to be	\$7,875	\$945,000	\$567,000	\$189,000	\$189,000	\$189,000
					returned/ project stalled						
					pending groundwater						
8	Leque Island Restoration	Acres	115?	DU	study			??			
					Fully funded, Final design						
	Port Susan Bay Preserve				complete, going to						
9	Dike Removal		[180]	TNC	construction in 2011-12						
	Progress since 2005 10 year Target Amount	Acres	T 0								
		Acres	315								
			3_3	Stillaguamish Tribe,							
				Snohomish County,							
10		Large river ELJs		Sno. Cons. District	10 year Goal	\$78,750	\$4,016,250	\$2,031,750	\$677,250	\$677,250	\$677,250
11	North Fork ELJs	Large river ELJs	5	Stillaguamish Tribe	Funded, ongoing						
	South Fork ELJ's	Largo river El 3a	121	SnoCo	Funded/construction 2011?						
12	Steelhead Haven			Stillaguamish Tribe	Complete						
13		Large river ELJs		Stillaguamish Tribe	Complete						
	South Fork ELJ's Phase II	Large river ELJs	3?	SnoCo	Proposed			\$525,000	\$175,000	\$175,000	\$175,000
	Jim Creek ELJ Design	Large river ELJs	3?	SSFETF	Proposed						
	Progress since 2005	ELJ's	8								
	10 year Target Amount	El Na	4.5								
	Remaining	ELJ's Miles armoring	43								
14	Floodplain		4.1	Various	10 year Goal	\$325,500	\$1,334,550	\$878.850	\$292 <i>.</i> 950	\$292.950	\$292.950
15	Tioouplani	Acres restored	30	Various	10 year Goal	\$120,750	\$3,622,500		\$562,695	\$562,695	\$562,695
16	North Meander		6.3	SnoCo	Complete						
	Pilchuck			_		_			_	_	
17				Stillaguamish Tribe	Complete						
18	Blue Slough Phases II-III Hazel Sidechannel (formed		[3.5]	Stillaguamish Tribe	Under Construction						
19	by Hazel ELJs)		0.4	Stillaguamish Tribe	Complete						
19	Jim Creek Restoration	ACTES TESTOTEU	0.4	Sanagaannsn mide	Complete						
21		Miles Removed	?	SSFETF	Funded, ongoing						
			•		.,						

ID	Project Type/Name	Units	Quantity	Sponsor	Project/Program Status	Cost/Unit	Total Cost for 10 Year Goal	Next 3 Year Cost	2011	2012	2013
ID	Chatham Acres Armoring					Cost/ Offic	Teal Goal	Next 3 Teal Cost	2011	2012	2013
	Removal South Meander- Final	Miles Removed	[0.1]	SnoCo	Proposed						
		Acres restored	?	SnoCo	Proposed			\$165,000	\$55,000	\$55,000	\$55,000
	South Slough Feasibility and		2	SnoCo/Arlington/Tri	Durant			+200,000	+cc cc3	*CC CC7	ACC CC7
	Progress since 2005 (Acres)	Acres restored	6.7	DE	Proposed			\$200,000	\$66,667	\$66,667	\$66,667 <u></u>
	10 year Target Amount										
	Remaining (Acres) Progress since 2005 (Miles		23.3							<u> </u>	
	Removed)		-0.4							l	
	10 year Target Amount Remaining (Acres)		4.5								
		Landslide									
22	Sediment	treatments Forest Road	2	Stillaguamish Tribe USFS, WADNR,	10 year Goal	\$2,362,500	\$4,725,000	\$1,431,818	\$477,273	\$477,273	\$477,273
23		Treatments	106	Tribes	10 year Goal	\$42,000	\$4,452,000	\$1,349,091	\$449,697	\$449,697	\$449,697
24	Segelson Road Treatments	Road Treatments	2	Snohomish Conservation District	Complete, staff changes made for reporting problems						
	Steelhead Haven Slide	Landslide			prosicino						
25	Remediation	treatments	1	Stillaguamish Tribe Snohomish	Complete shelf sherring						
	Deer Creek Headwaters			Conservation	Complete, staff changes made for reporting						
26		Road Treatments	?	District	problems						
27	Higgins Instream	Sediment Stored	2	Stillaguamish Tribe- USFS	Complete, monitoring data incomplete						
21	Gold Basin Feasibility and			Stillaguamish Tribe-	data incomplete				-		
28	Design	treatments	[1]	USFS	Final Design due 2011						
29	Canyon Creek Roads Phase	Road Treatments	21.6	Stillaguamish Tribe- USFS	Phase I Funded, Phase II still needed						
		Landslide									
	Gold Basin Construction Progress since 2005	treatments	[1]	Tribe/USFS	Proposed			\$1,500,000	\$500,000 I	\$500,000	\$500,000
	(Landslides)		1							l	
			applications								
			for 56 miles of new road,							l	
			26 miles of		Working on reporting					l	
	Progress during 2010 (Forest Road Treatments)		abandonme nt		problems going back to 2005					l	
	10 year Target Amount		- · · · ·		2000						
	Remaining (Landslides)		1		Waldan a sanaki				 		
	10 year Target Amount Remaining (Forest Road				Working on reporting problems going back to				1		
	Treatments)		?		2005						
		Acres acquired in Priority Reaches									
		(Floodplain,									
30	Protection/Acquisition	Riparian, Large	1445	Tribes, CLC, WCLT,	10 year Goal	\$12,075	\$17,448,375	\$6,474,494	\$2,158,165	\$2,158,165	\$2,158,165
30	Arney	woou, Estuary)	1445	CLC/Stillaguamish	Funded, Closed,	\$12,075	\$17;440;3/5	30,474,494	φ2,130,103	φ2,130,103	\$2,130,103
31	Acquisition/Restoration	fee simple	19.35		restoration ongoing						
32	Graafstra Floodplain	fee simple	137	City of Arlington	Funded, Restoration ongoing						
	Pilchuck				Funded, Restoration						
33				Stillaguamish Tribe	ongoing						
34 35				Stillaguamish Tribe CLC	Funded Complete						
	•										
36	PTF Hazel Hole Conservation French-Segelson	Easement	26	DNR	Complete						
37		fee simple	103	CLC	in process						

23

					Project/Program		Total Cost for 10				
ID	Project Type/Name	Units	Quantity	Sponsor	Status	Cost/Unit	Year Goal	Next 3 Year Cost	2011	2012	2013
					Funded, Restoration						
38	Klein Farm Acquisition	fee simple	60	Stillaguamish Tribe	ongoing						
	Noble Acquisition			Stillaguamish Tribe	Funded, will close 2011						
	Ellingsen Acquisition			Tribe/CLC	Proposed			\$5,000,000			
	Rengen Acquisition	fee simple		Tribe/CLC	Proposed			\$4,000,000			
	Gardner Acquisition		[3]	Tribe	Proposed			\$150,000			
	Sierra Pacific Upper NF										
	Timberland Acquisition		[1000]	Tribe/CLC	Proposed			\$1,000,000			
	Deer Creek Timberland										
	Acquisition	fee simple	[1000]	Tribe/CLC	Proposed			\$1,000,000			
	ARO (Tree Farm Hole)										
	Acquisition			Tribe	Proposed			\$800,000			
	ĭ	Acres	551.35								
	10 year Target Amount										
	Remaining	Acres	893.65								
						Total capital need	\$44,787,225	\$17,898,717	\$5,966,239	\$5,966,239	\$5,966,239

33

	Non Capital Pro	jects														
					Project/Program			Estim	ated	Additi	ional ng Needed	Tota	l Cost:			
	Category/Name	Units	Quantity	Likely Sponsor		Total	3 Year Cost				3 years	2011			2012	201
	Hatchery															
	Tracerier y	T		Stillaguamish												
1	NF Integrated Recovery	# of smolts		Tribe and WDFW	Ongoing	\$	686,700	\$	498,000	\$	188,700	\$	228,900	\$	228,900	\$ 228,900
			100,000 to	0.11												
7	SF Integrated Recovery	# of smolts	150,000 smolts	Stillaguamish Tribe and WDFW	ongoing	\$	441,000	\$	300,000	\$	141,000	\$	147,000	\$	147,000	\$ 147,000
	The state of the s	<i>"</i> 01 51110165	jornores	Thise and West W	Tongonig	1 4	112/000	Subto	•	\$	329,700	1 4	2177000	Ι Ψ	1177000	Ψ 11,7000
								Subt	Jean	Ψ	323/100					
	Harvest															
	Spawning ground			Stillaguamish												
3	Surveys	Program	Program	Tribe, WDFW	Ongoing	\$	201,600	\$	192,000	\$	9,600	\$	67,200	\$	67,200	\$ 67,200
			Possibly revised													
			harvest													
	Danasa and af		management	Talelia and	Comment at a standard CF											
	Reassessment of Recovery Exploitation		guideline for NF and SF	Tulalip and Stillaguamish	Cannot start until SF hatchery is up and											
4	Rate (RER) for SF	Project	populations	Tribes, WDFW	running	\$				\$	_	\$	_	\$	_	\$ -
	Manitarina /Manasina			Tulalia and												
	Monitoring/Managing Fisheries to keep			Tulalip and Stillaguamish												
	exploitation rates			Tribes, WDFW,												
	below acceptable levels	Program	program	NOAA fisheries	ongoing	\$	756,000	\$	756,000	\$	-	\$	252,000	\$	252,000	\$ 252,000
								Subto	otal	\$	9,600					
	Habitat															
	Protection															
	Actions															
				Tribe/CLC/Washin												
	Purchase of Water			gton Water Trust/Wild Fish												
6	Rights	cfs/gpm	50	Conservancy	Concept	\$	1,250,000	?		\$	1,250,000	\$	416,667	\$	416,667	\$ 416,667
-	Lower South Fork Water Typing			Wild Fish Conservancy	Proposed	\$	200,000	,		\$	200,000	d-	66,667	d-	66,667	\$ 66,667
/	water ryping			Conservancy	Not Started; Riparian	→	200,000	f		Þ	200,000	→	00,007	Þ	00,007	\$ 00,007
	Revision of ACOE Dike				veg is mowed on a											
	Maintenance Strategy to better protect				regular schedule, increasing temperatures											
8	stream functions			ACOE, NOAA, PSP	and degrading habitat	?		?		?		?		?		?
	Change needed in			,												
	Shoreline and Hydraulic															
	code to better protect stream functions.															
	Remove harmful				Not Started; Increase of											
	exemptions, including federal.			WDEW NOAA	2250' of hardened bank	2		2		2				2		2
	nienerai.			WDFW, NOAA	since 2005	۱:		ļ (?		l (۲.		ţ

	Category/Name	Units	Quantity	Likely Sponsor	Project/Program Status/Background	Total 3 Year Cost	Estimated Existing Funds	Additional Funding Needed Next 3 years	Total Cost: 2011	2012	2013
					Added more than 3% of						
					Near stream TIA in last						
	Strengthening of CAR				five years(some						
	to achieve net				subbasins- Purser and						
	protection of habitat,			WDEW DOD	Simmonds 2008). Ag						
	removing state exemptions for Ag			WDFW, PSP,	land still not required to	7	2	2		1	
	County Code change			SnoCo	buffer streams	<u>:</u>	f	ļŗ.	f	<u>f</u>	f
	needed to prohibit new										
	construction within the										
	historic channel				Homes being built in						
	migration zone of				CMZ of NF and other						
11 5	salmon bearing waters			SnoCo	salmon waters.	?	?	?	?	?	?
	Move from complaint										
	driven to active										
	enforcement of all										
	regulations protecting										
	fish and wildlife habitat/ real			All state, federal,	Substantive						
	enforcement of existing			and local	enforcement is lacking,						
	regulations. Strengthen			agencies, PSP	often pays to break						
	Enforcement.			coordinating	rather than follow laws	?	?	?	?	?	?
					Streams draining urban						-
L	LID requirements				areas (Portage, Church,						
	needed for all new				etc) showing signs of						
	development/re-			WADOE, PSP,	stormwater impacts						
	development			SnoCo, NOAA	during rains	?	?	?	?	?	?
	Strengthen Forest										
	Practice Regulations to										
	achieve hydrologic mature forest in all										
	subbasins, and limit				NF hydrograph						
	roadbuilding on				continues to show trend						
	unstable geology			WADNR	of increasing peak flows	?	?	?	?	?	?
	More work needed to				<u> </u>						
٤	streamline permits			All state, federal,							
	(esp. Sect. 106 review)			and local	Projects delayed due to						
	for all restoration			agencies, PSP	current permit						
	projects			coordinating	environment	?	?	?	?	?	?
	Strengthen Comp Plan/										
	amend GMA to align				Commonths mat						
	with goals in Salmon			SnoCo	Currently not consistent/contradictory	2	2	?	2	2	2
10 6	Recovery Plan Integration of Chinook			SnoCo	consistent/contradictory	:	ī.	f	f	:	:
	Recovery Plan critical										
	habitat and ecosystem										
	processes with local										
	government permit				Ag shouldn't be the only						
	review process for all				specialty group weighing						
	development projects.			SIRC	in on permit applications		\$154,500	\$(\$51,500	\$51,500	\$51,500

2 of 7 Stillaguamish 3-Year Work Plan, Non-Capital

					Project/Program		Estimated	Additional Funding Needed	Total Cost:		
	Category/Name	Units	Quantity			Total 3 Year Cost	Existing Funds	Next 3 years	2011	2012	2013
					Work from more highly						
	Regulatory (SMP?)				urbanized watersheds is						1
	changes needed to				showing that chemicals						1
	prevent toxics from				in stormwater are					!	1
	entering fresh and				causing sub-lethal						1
18	marine waters			WADOE	effects in salmonids	?	?	?	?	?	?

								Subtot	tal	\$	1,450,000					
	Stewardship	1	ī			ı								ı		
		Davidan and		County,			l									
		Develop and		Stillaguamish			l									
		implement plan, objectives, &		Tribe, USFS, WDFW, Sno.			l									
		deliverables for		Cons. District,			l									
	3	stewardship		Beach Watchers,			l									
	•	activities in the		TNC, City of			l									
19		Stillaguamish	TBD	Arlington,	Ongoing	\$	472,500	\$	75,000	\$	397,500	\$	157,500	\$	157,500	\$ 157
	•	Ĭ		<u> </u>	Discussions w/ partners				•	•	,				-	
	Stillaguamish				and others with similar		l									
	Watershed Stewards				programs, Title II RAC		l									
20	Volunteer Program	Program	TBD	USFS, Stilly-Sno	grant proposal	\$	94,500	\$	25,000	\$	69,500	\$	31,500	\$	31,500	\$ 31
24	Restoration Education	5	TD 0	CUIL C. FETE		١.	25 200		2.600	_	24 600		11 760	_	11 760	
	for Young Stewards	Program	TBD	Stilly-Sno. FETF	Ongoing	\$	35,280	\$	3,600	\$	31,680	\$	11,760	\$	11,760	\$ 11
		Monthly														
		Newspaper ads,					l									
		website					l									
		development,	2,		Expanded component of		l									
		newsletter	Website,	Stillaguamish	ongoing stewardship	l .						1				
22		production	Newsletter	Tribe	program	\$	94,500	\$	15,000	\$	79,500	\$	31,500	\$	31,500	\$ 31
	Construction site						l									
	visitation and						l									
	Education shared FTE with Stanwood,						l									
	Arlington, Granite fall,						l									
	Darrington, Snohomish			SnoCo. and			l									
23		Program	1 FTE	Arlington	Discussion	\$	168,000	\$	-	\$	168,000	\$	56,000	\$	56,000	\$ 56
	Stillaguamish			Snohomish							,		, , , , , , ,		,	
24		Program	TBD	County	Ongoing	\$	126,000	\$	120,000	\$	6,000	\$	42,000	\$	42,000	\$ 42
				People for Puget												
				Sound,												
				Snohomish			l									
	0 10 1			County Marine			l									
	Sound Stewards	Duo aun m	TRD	Resources	Ongoing		12 (00		4 000	+	0.600	_	4 200		4 200	 4
25	Program	Program	TBD	Committee	Ongoing	\$	12,600	\$	4,000	\$	8,600	\$	4,200	\$	4,200	\$ 4,
	Salmon Watch Program															
	Salmon Watch Program & Pond Watch Program						ı									
	& Pond Watch Program						I									
	& Pond Watch Program to engage citizens in	Participants/year,	40,	Snohomish												

Category/Name	Units	Quantity	Likely Sponsor	Project/Program Status/Background	Total 3	3 Year Cost	Estim Existi		Additional Funding N Next 3 year	leeded	Total 2011	Cost:		2012		20
Adult Education Programs - educator and homeowner 27 workshops	Number of Site Visits Number of Participants Contact Hours	15, 800, 450	Snohomish County	Ongoing	\$	34,650	\$	33,000	\$	1,650	\$	11,550	\$	11,550	\$	11,5
Youth & Parent Education Programs - Classroom & field presentations 28 requested by teachers	Number of Site Visits Number of Participants Contact Hours	16, 800, 450	Snohomish County	Ongoing	\$	34,650		33,000	\$	1,650	\$	11,550	\$	11,550		11,
Volunteer Mussel Survey/Analysis Program to identify pollutant concentration		TDD	Snohomish County Marine Resources Committee, NOAA, Stillaguamish	Onzainz		15.750		15.000	.	750	4	F 250	.	F 250	4	F .
29 in marine waters Forestry Stewardship	Mussels Surveyed	IRD	Tribe WSU	Ongoing	\$	15,750	\$	15,000	\$	750	\$	5,250	\$	5,250	\$	5,2
30 Education Program	Program	TBD	Extension/SWM	Ongoing	\$	210,000	\$	149,000	\$	61,000	\$	70,000	\$	70,000	\$	70,
Stillaguamish Festival 31 of the River	events, people attending, groups participating	1 5000 30	Stillaguamish Tribe	ongoing	\$	630,000	\$	540,000	\$	90,000	\$	210,000	\$	210,000	\$	210
Salmon life history	Classroom visits or tours,	15, 650	Stillaguamish tribe	angaing	<u></u>	47.250	.	39,000	¢	0.250	\$	15 750	#	15 750	#	15
32 programs for youth Technical service &	participants	650	Stillaguamish	ongoing	\$	47,250	\$	39,000	\$	8,250	*	15,750	>	15,750	\$	15
33 outreach activities	hours	510	Tribe	ongoing	\$	80,325	\$	67,500	\$	12,825	\$	26,775	\$	26,775	\$	26
Stilly Sub-basin TMDL Farm planning and 34 education	site visits, farm plans, info sent, workshops	12,6, 620, 1	Snohomish Conservation District	in progress	¢	92,400	¢	88,000	\$	4,400	\$	30,800	¢	30,800	\$	30
CWD Farm planning and technical	contacts, farm		Snohomish Conservation		Ψ										-	
35 assistance Conservation District stream and riparian	plans	540, 36	District Snohomish Conservation	ongoing	\$	447,300	\$	426,000	\$	21,300	\$	149,100	\$	149,100	\$	149
36 restoration program	Program	TBD	Conservation District Snohomish	ongoing	\$	189,000	\$	24,000	\$	165,000	\$	63,000	\$	63,000	\$	63
SWM education and 37 stewardship program	Program	TBD	Conservation District	ongoing	\$	121,275	\$	115,500	\$	5,775	\$	40,425	\$	40,425	\$	40
PDS permitting response & farm	contacts, farm		Snohomish Conservation	Jengenig			7		7	5/115	T	,	т	,	T	
38 planning	plans updated	150, 15	District Snohomish	ongoing	\$	118,125	\$	112,500	\$	5,625	\$	39,375	\$	39,375	\$	39
NPDES response to solid waste referrals	Program	TBD	Conservation District	projected	\$	189,000	\$	-	\$	189,000	\$	63,000	\$	63,000	\$	63
LID/ stormwater 40 program	Program	TBD	Snohomish Conservation District	projected	\$	189,000	\$	-	\$	189,000	\$	63,000	\$	63,000	\$	63
	1	1		15.030000	1 T	_55,555	Subt	otal		17,980	T	35,555		55,500	Т	- 55

Category/Nam	e Units	Quantity	Likely Sponsor	Project/Program Status/Background	Total 3	Year Cost	Estima Existii	ated	Addition Funding Next 3 y	Needed	Total 2011	l Cost:		2012	
Monitoring	, Adaptive Mana	agement. A	Assessments.	Data Gans											
	Annual Monitoring & Adaptive Management Report, Increased														
Plan Monitoring a 41 Adaptive manage	and Capacity for M 8	1 FTE	Multiple Stakeholders	Ongoing	\$	346,500	\$	50,000	\$	296,500	\$	115,500	\$	115,500	\$
Mainstem Juveni	le Production		Stillaguamish		·	·		·		·		·		•	
42 Outmigrant Trap	Estimation	NA	Tribe	ongoing	\$	378,000	\$	120,000	\$	258,000	\$	126,000	\$	126,000	\$
Coded-wire tagg		200 000 /	Stillaguamish tribe (tagging); multiple agencies (tag recovery, reading, and			01 000		70,000		2.000		27 200	4	27 200	
43 Program	released	200,000/yr	analysis)	Ongoing	\$	81,900	\$	78,000	\$	3,900	\$	27,300	\$	27,300	\$
Reassessment of Recovery Exploit			Tulalip Tribes,	Not started until SF supplementation smolts											
44 Rate (RER)	populations	NA	WDFW	can be tagged	\$	-	\$	_	\$	-	\$	-	\$	_	\$
Water quality 45 monitoring	Multiple samplin	g NA	Snohomish County, Stillaguamish Tribe, City of Arlington	Ongoing	\$	787,500	\$	750,000	\$	37,500	\$	262,500	\$	262,500	\$
46 Large river surve	River miles ey surveyed	80	Snohomish County, Stillaguamish Tribe	Ongoing (every 5 years)	\$	504,000	\$	72,000	\$	432,000	\$	168,000	\$	168,000	\$
47 Wadahle stream	Wadable stream survey miles surveyed	90	Snohomish County, Stillaguamish Tribe, Tulalip Tribes, USFS	Ongoing	\$	567,000	\$	81,000	\$	486,000	\$	189,000	¢	189,000	\$
Fine sediment da	ata River miles	30	Snohomish County, Stillaguamish	Ongoing: Pilchuck begun in 2009. NF and	Ψ	307,000	Ψ	01,000	Ψ	+00,000	Ψ				
48 collection and an	alysis sampled	80 miles	Tribe	SF complete	\$	682,500	\$	60,000	\$	622,500	\$	227,500	\$	227,500	\$
Reach scale river			Snohomish												
49 restoration analy		NA	TNC,	in progress	\$	105,000	\$	100,000	\$	5,000	\$	35,000	\$	35,000	\$
Estuary monitori 50 assessment	Monitoring	NA	Stillaguamish Tribe	Ongoing	\$	252,000	\$	45,000	\$	207,000	\$	84,000	\$	84,000	\$
51 South Fork smol		NA	Tribe	Not Started	\$	367,500	\$	_	\$	367,500	\$	122,500	\$	122,500	\$
Stillaguamish Mu			Snohomish	60005	_		_			0 ==0	_	F 050	_	5.35 6	
52 Survey	surveyed		County	Ongoing as of 2005	\$	15,750	\$	6,000	\$	9,750	\$	5,250	\$	5,250	\$

Category/Name	Units	Quantity	Likely Sponsor	Project/Program Status/Background	Total 3	Year Cost	Estimate Existing		Addition Funding Next 3 y	Needed	Total 2011	Cost:		2012		201
3 7.		,	Stillaguamish	, ,												
Juvenile salmon			Tribe, NOAA,													
endocrine disruptor			Snohomish													
	Dagin wide	NIA.		Ongoing	+	70 750	.	75 000	<u></u>	2.750	_	26.250		26.250	+	26.25
	Basin wide	NA	County MRC	Ongoing	\$	78,750	\$	75,000	\$	3,750	>	26,250	*	26,250	>	26,25
Pocket Estuary				All PE's have been												
Mapping - Identify and	,			mapped by SRSC.												
	pocket estuary		Stillaguamish	Prioritization is a short												
54 restoration	map	NA	Tribe	office exercise.	\$	5,250	\$	=	\$	5,250	\$	1,750	\$	1,750	\$	1,75
	Integrated															
	hydrodynamic															
Development and	models for															
adaptation of	restoration		Snohomish													
•		NA		Drogram	.	1 5 7 500	¢.		+	157 500	₊	52,500	 	E2 E00	.	52,50
		IVA	County	Program	\$	157,500	\$		\$	157,500	>	32,300	*	52,500	>	32,3
	Multiple sites in															
	North Fork by															
Temperature	303(d) listed															
56 monitoring	segments	NA	USFS	Planning; seeking funds	\$	26,250	\$	5,000	\$	21,250	\$	8,750	\$	8,750	\$	8,75
Forest Roads				1		,	•	,	<u> </u>	,	1	,	1	,	Ċ	., -
Assessment for future	Miles of Forest															
57 treatments		45	FS, Tribes	Planning; seeking funds;	\$	23,625	ď	5,000	ď	18,625	4	7,875	ď	7,875	d-	7,87
J/ Li edillellis	Roads Assessed	43	<u> </u>	riailillig, seekilig lufids;	→	23,025	\$	5,000	*	10,025	7	7,075	 	7,075	 	7,87
			Wild Fish													
Basin Wide Sediment			Conservancy,													
58 Budget	Sediment Budget	NA	USFS	Preliminary Review	\$	367,500	\$	=	\$	367,500	\$	122,500	\$	122,500	\$	122,50
			Wild Fish													
Chinook prespawning	Middle North Fork		Conservancy,													
	and tributaries		Stillaguamish													
,		NA	Tribe	Not Started	\$	110,250	\$	45,000	\$	65,250	\$	36,750	\$	36,750	\$	36,7
Jo disease sai veys	Sur veyeu	1177	Wild Fish	110t Started	Ψ	110,230	Ψ	13,000	Ψ	03,230	Ψ	30,730	1 4	30,730	Ψ	30,75
CITIL TO STATE OF STA			Conservancy,	F 1.1: 2007												
Stillaguamish low flow		l		Funded in 2007, work							l .		1.		١.	
60 water right assessment	Basın Wide	NA	Trust	has begun	\$	70,344	\$	10,044	\$	60,300	\$	23,448	\$	23,448	\$	23,4
			Wild Fish													
Forest Practice review			Conservancy,													
61 and assessment	USFS Lands	NA	USFS	Not Started	\$	78,750	\$	-	\$	78,750	\$	26,250	\$	26,250	\$	26,2
			Wild Fish		·	•	·		Ċ	•		•		•		•
			Conservancy,													
South Fork Reach Fish	South Fork - sites		Snohomish													
				Not Started		160 000	ф		L +	160 000	_	E6 000	+	E6 000	l ₊	E6 0
	to be determined	INA	County	Not Started	\$	168,000	Þ	=	\$	168,000	≯	56,000	*	56,000	≯	56,0
Stillaguamish Mainstem			Snohomish	<u>_</u> .	l ,				1.		1.		1.		l .	
Assessment			County	Proposed	\$	300,000	\$	-	\$	300,000	\$	100,000	\$	100,000	\$	100,00
			Snohomish													
Stilly Sub-basin TMDL	stream		Conservation	monitoring plan												
	monitoring sites	8	District	completed	\$	29,400	\$	28,000	\$	1,400	\$	9,800	\$	9,800	\$	9,80
				<u> </u>		-,	Subtota			,973,225	Γ΄	-,	1 '	-,	T '	2,30
Stratogic										, -,===						
Strategic																
Planning/Capacity																
increases																
Comprehensive estuary			Snohomish													
64 restoration strategy		Drogram		Not started	d d	52,500	¢	25,000	dr.	27,500	4	17,500	d d	17,500	d	17,50
		Program	County	Not started	₽	JZ,500	.	25,000	P	27,300	₽	17,500	₽	17,300	P	1/,3
Comprehensive			_													
floodplain function			Snohomish													
65 strategy		Program	County	Not started	\$	47,250		20,000	\$	27,250		15,750		15,750		15,75
							Subtota			54,750					Variety Dia	n, Non-C

Category/Name	Units	Quantity	Likely Sponsor	Project/Program Status/Background	Tota	l 3 Year Cost		mated	Fun	itional ding Needed t 3 years	Tot 20:	tal Cost: 11	2012	2013
Watershed Coordination														
Lead entity 66 administration		Program	Snohomish County, Stillaguamish Tribe	Ongoing	\$	510,000	\$	510,000	\$	_	\$	170,000	\$ 170,000	\$ 170,000
City and urban assistance in plan implementation and code amendments	Program	NA	City of Arlington		\$	160,000	\$	160,000	\$	-	\$	53,333	\$ 53,333	\$ 53,333
							Sub	total	\$	-				
		Total n	on-capital need		\$	13,225,399	\$	5,890,144	\$	7,335,255	\$	4,408,466	\$ 4,408,466	\$ 4,408,466

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