SKAGIT (WRIAs 3 and 4)

SKAGIT BASIN THREE-YEAR WORK PROGRAM 2012 UPDATE

SUMMARY NARRATIVE

The three-year work plan/program updates should include a narrative to describe the progress, changes, and status of recovery implementation and your work program since the previous year's update. These narratives can be a summary. Some questions may not be answerable at this time, please note where you cannot answer the questions.

Overview

The 2012 *Skagit Basin Three-Year Work Program* updates those projects and programs, active and planned, targeted at the recovery of Chinook salmon populations in the Skagit watershed for the next three years (2012, 2013, and 2014). The update on habitat capital projects was completed by Skagit Watershed Council staff using information provided by project sponsors in a pre-grant scoping process, current grant applications, and the status of active projects in PRISM. Eric Beamer, Research Director with Skagit River System Cooperative, provided updates on Research and Monitoring activities and needs. Ed Connor, fisheries scientist with Seattle City Light, provided the update on the status of Chinook stocks in the Skagit. The actions identified are consistent with the recovery needs found in the *Skagit Chinook Recovery Plan* (SRSC and WDFW 2005). The proposed actions also provide valuable habitat benefits to other listed and non-listed species including bull trout, steelhead, pink, chum, and coho salmon.

Until a forum exists locally for the integration of all elements of the Skagit Chinook Recovery Plan, our Three-Year Work Program is limited in scope to those elements contracted and funded under the lead entity authority. This includes the Habitat Capital program, non-capital needs related to the habitat capital program, and watershed research needs not identified in harvest and hatchery programs.

The Watershed Council has been engaged with Puget Sound Partnership and the Recovery Implementation Technical Team (RITT) in their development of a watershedscale adaptive management framework (template) for the last three years. The RITT has used the Skagit as one of three watersheds to build an adaptive management framework for the watershed chapters of the Puget Sound Salmon Recovery Plan. We had anticipated waiting until the template was available to further dialogue about the technical components of recovery. As template development is delayed and the Watershed Council is in the process of exploring organizational restructuring this year, the shape or form of future engagement on integration of the parts of the Skagit Chinook Recovery Plan cannot be projected at this time.

Summary of Changes to the Three Year Work Program for 2012

Changes to the Skagit Three Year Work Program for 2012 include an update of the status of active projects from the 2011 list, and removal of three habitat capital projects for reasons explained in the list. Completed projects with proposed or planned post-construction monitoring have been moved to the place on the list labeled "15 Monitoring." The 2012 Habitat Capital projects list includes the five project proposals currently under review for the 2012 SRFB grant round. Our 2012 SRFB grant process gave priority to furthering projects already under development while remaining open to take advantage of new opportunities as they arise. Two of the projects received are new to our list and were accepted as consistent with our updated Strategic Approach. A reminder that the Habitat Capital Projects list is organized to reflect the Tiers and Target Areas (Table 1) adopted in the 2010 update of the Council's Strategic Approach.

Starting last year we interpreted the "20xx Estimated Cost" columns to be the year in which a funding request of a certain amount will be made. The "20xx Activity to be funded" columns indicates the type of work on the grant that is expected to occur during that year regardless the year the activity was funded. Estimated project costs for year 2012 include funding requested for projects under consideration in the 2012 SRFB grant round. Year 2013 and 2014 estimated project costs and activities are approximate.

Research and monitoring projects and needs have been updated this year and are reported on the list by life history stage as organized in the corresponding recovery plan chapters. Because these programs have been extensively updated, completed projects are included this year regardless the completion date. The costs associated with monitoring projects are the current or projected secured funds for those yearly monitoring activities. The costs of most of the research projects have not yet been provided, so annual and collective cost totals do not reflect needs. This coming year we plan to enter the Research and Monitoring projects in the Habitat Work Schedule.

We remain focused on developing projects in our target areas and out-planning. As with the last couple of updates, we are providing a longer-term context for viewing the collection of actions supporting the implementation of the Skagit Chinook Recovery Plan. Accompanying this summary and Three Year Work Program spreadsheet is a Gantt chart listing of habitat capital projects funded and planned from 2000 through approximately 2020. Projects funded in multiple phases are shown on a single line,

color-coded by different stages of development. Those projects in the 2012 Three Year Work Program are bracketed by dark vertical lines for reference. The Gantt chart is provided as a visual aid for understanding the stage of development and timeline for projects that exist beyond the 2012-2014 Work Program window. As planned projects are ready for implementation they will move into the three year planning window. We plan to include the Research and Monitoring projects in the Gantt chart next year.

Table 1. Summarv	of Target Areas	from the Skapit Watershed	Council 2010 Strategic Approach.
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Tier	Target Area	Description	Geographic Locations within Watershed	Importance to Skagit Chinook Production
	Skagit Estuary	Estuarine emergent marsh, estuarine scrub shrub.* Saltwater-freshwater mixing areas. Most productive aquatic ecosystem in watershed. Remaining brackish habitats areas are highly compressed due to dikes and levees. Key habitat features include delta distributaries and blind sloughs.	Skagit Bay including Fir Island bay front; lower end of North and South Fork Skagit River; Swinomish Channel; and associated wetlands on Padilla Bay	Critical physiological transition zone for juvenile Chinook (all life history types). Highest growth rates for juvenile Chinook in watershed (hence high ocean survival). Loss of habitat substantially reduces juvenile survival in Puget Sound and ocean.
1	Riverine Tidal Delta	Riverine tidal marshes and wetlands* are the second most productive aquatic ecosystems in watershed.	North and South Fork Skagit River up to and including Cottonwood Island	Historically expansive habitat area for delta-rearing Chinook juvenile life history type. Rearing habitat areas limited due to dike and levee system.
	Floodplains (mixed population rearing)	Broad large-river floodplain areas with prominent alluvial features formed by channel migration, including secondary (islanded) channels, backwater habitats, freshwater sloughs, and oxbows. Highly productive aquatic habitats due to frequent floodplain inundation and extensive wetlands.	Floodplains of the Skagit River from Cottonwood Island to Marblemount, and the Sauk River up to Darrington.	Historically expansive rearing habitat area for distinct riverine juvenile Chinook life history type. Middle Skagit provides rearing habitat for all six independent Chinook populations in Skagit. Growth rates of juveniles equivalent to tidal freshwater habitats. Major spawning areas for fall and summer Chinook.
	Nearshore Pocket Estuaries	Isolated and relatively small estuary habitats located along nearshore areas of Skagit Bay (WRIA 3).	Pocket estuaries in Skagit Bay that are in close proximity to the delta	Rearing habitats for fry migrant Chinook salmon emigrate from Skagit River in large numbers. Ocean survival rates extremely low (near zero) for emigrating fry that don't rear in these habitats.
2	Floodplains (single population rearing)	River floodplain areas with prominent alluvial features formed by channel migration, including secondary (islanded) channels, backwater habitats, freshwater sloughs, and oxbows. Highly productive aquatic habitats due to frequent floodplain inundation and extensive wetlands. Large tributaries that currently or historically provided extensive spawning and rearing habitat areas for Chinook salmon.	Floodplains of the upper Skagit (above Marblemount), upper Sauk (above Darrington), Suiattle, and Cascade Rivers. Day Creek, Finney Creek, Illabot Creek, Bacon Creek	Major spawning areas for single Chinook populations. Historically expansive rearing habitat area for riverine juvenile Chinook. Important to spatial structure and life history diversity of Chinook populations according to NOAA Viable Salmonid Population (VSP) criteria.
3	Sediment and Hydrology Impaired (High Risk) Watersheds	Watersheds that have been identified as major sediment risk areas to important downstream Chinook spawning and rearing habitats. Watersheds located in unstable soils, sedimentary geology, and which possess high densities of forest roads.	Major tributaries to lower Cascade River, lower Suiattle River, and middle Skagit.	Increased risk of severe habitat degradation and reduced Chinook survival due to high risk of landslides, road failures, combined with peak flows caused by historic land management (i.e., logging) and forest road development.

* See Skagit Chinook Recovery Plan (2005) Appendix D for definitions.

Responses to Watershed Questions for Three-Year Work Programs

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?

Attached is our updated list of habitat, monitoring, and research actions and projects identified for some phase of implementation within the next three years. The format of the list complies with the regional template. As we have for the past several years, projects are color-coded by status as follows to assist review:

- Added to the list for 2012 (yellow shading)
- Removed from 2012 list (gray)
- In progress, phased implementation and funding (blue)

Also attached is a Gantt chart showing those habitat capital projects on our Three Year Work Program within the context of a larger time frame.

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

About 12% of the restoration needed to achieve the recovery goals in the estuary has been done, and the Intensively Monitored Watershed (IMW) work corroborates this estimate (Greene and Beamer 2011). Most of that work has been completed in the South Fork Skagit River and to a lesser degree along Swinomish Channel. Skagit IMW investigators report finding a juvenile Chinook response to this amount of restoration (Greene and Beamer 2011). For a given outmigrant population size they found fish density in the South Fork, where rearing habitat capacity has increased, to have declined post-restoration (starting with Deepwater Slough restoration) relative to the North Fork where little or no restoration work has been completed.

We are currently keeping pace with estuary restoration if we assume the habitat goal is on a 50 year timeline. The Fisher Slough tidal marsh restoration was completed late last year. Completion of work is expected this year on a series of small marsh sites along the Swinomish Channel created by the removal of dredge spoils, and on expansion of tidal inundation at WDFW's Milltown Island in the South Fork. Progress on three tidal delta projects on WDFW land (Fir Island Farms, Cottonwood Island and Deepwater Slough Phase 2), are projected to occur in the next couple of years. Whether or not we can keep up this pace is debatable as many of the remaining identified delta restoration projects involve privately owned agricultural land. Within WRIAs 3 and 4, two of the five pocket estuary restoration projects identified in the recovery plan have been completed. Connectivity was restored to the pocket estuary at Turners Bay this spring, and will be restored to the Dugualla Heights lagoon within the next year or two. The Dugualla Heights lagoon project is located in WRIA 6 with SRFB funding support from both Skagit and Island County.

In the freshwater, more progress has been made in acquisitions for protection of existing habitat than in restoration, with roughly 47 percent of Skagit SRFB funds applied to floodplain acquisitions to date. Post-recovery plan restoration projects in freshwater have largely included riparian plantings and sediment reduction work on Forest Service roads. Notable instream projects include a large-scale alluvial fan restoration in Hansen Creek completed in 2010, engineered log jams installed in lower Finney Creek and planned for lower Day Creek, and off channel enhancement under construction at Howard Miller Steelhead Park at Rockport. Restoration progress in freshwater is beginning to accelerate with feasibility and design work proposed or in progress on the following significant instream and off-channel enhancement and habitat reconnection projects:

- Barnaby Reach Restoration
- Illabot Creek alluvial fan restoration (phase 1 construction funded in 2011)
- Davis Slough hydrologic connectivity
- Savage Slough Acquisition & Restoration (South Skagit Highway Realignment)

The middle Skagit project development work completed last year will help us in moving more mainstem floodplain restoration projects forward in the next five years.

We are still in the process of finalizing templates for estimating the juvenile habitat capacity benefit of proposed restoration projects available for use by our project sponsors. Although not identified as an action in the recovery plan, it remains important work to track our progress of restoration goals. We are structuring the templates to facilitate updating the estimates of juvenile carrying capacity for individual projects upon changes in design, as-builts, and empirical model refinements. The current estimate of the contribution of individual projects to the juvenile carrying capacity recovery goal will reside on each project page in the Habitat Work Schedule. A proposal to update our juvenile carrying capacity model for the tidal delta by IMW investigators is included in the research section of the list.

Monitoring:

In general, 10 of the 12 specific monitoring programs identified in the monitoring chapter of the Skagit Chinook Recovery Plan (SRSC and WDFW 2005) are being implemented. Most of these support harvest management and hydroelectric dam

licensing, and we do not list them in our work program spreadsheet. The two actions not being implemented are: 15.3.5 (Fall Chinook Indicator Stock Program) and 15.6.1 (monitor and assess ongoing land use impacts to Chinook). The fall Chinook program was conducted but is currently not implemented due to funding. 15.6.1 is really status and trends monitoring of habitat and is listed here as an unfunded priority. It is also something RITT has stated is a major gap throughout Puget Sound.

Intensively Monitored Watershed (IMW):

In the cases of tidal delta and nearshore restoration, basin-scale monitoring is implemented according to the Intensively Monitored Watershed Plan as Appendix E in the Skagit Chinook Recovery Plan. The key findings of the most recent IMW report (Greene and Beamer 2011) showed that 1) restoration in the Skagit River tidal delta is needed to address capacity and connectivity limitations, 2) local restoration did improve rearing densities for juvenile Chinook salmon, and 3) system-wide responses can be detected using a before/after control impact (BACI) design. In addition, it appears capacity limitations still exist in the Skagit River tidal delta, as judged from recruitment patterns into shoreline habitat, and that further tidal delta restoration is warranted. Their monitoring work corroborates the estimate that the amount of restoration work completed in the tidal delta is 12% of goal of the Skagit River Chinook Recovery Plan.

Effectiveness Monitoring:

At the project scale the biological component of monitoring includes Chinook salmon presence or absence, fish density, community compositions, and Chinook size. Fish sampling at restoration sites was expanded this year, particularly in the natal estuary, as some new funding was obtained and put toward this. Fish monitoring is being done on the following built natal estuary restoration projects in 2012:

- Fisher Slough (2009-2012, intent is for ongoing)
- South Fork Dike Setback (2012 only)
- Wiley Slough (2012 and 2013)
- Milltown Island (2012 and 2013)
- Swinomish Channel Fill Removal (2009-2012)
- Smokehouse (Fornsby) Slough Phase I (2004-2011)
- Smokehouse (Fornsby) Slough Phase I and II (2012 and ongoing)

Fish monitoring is being done on the following built and designed pocket estuary restoration projects:

- Crescent Harbor (2010 and ongoing)
- Lone Tree Lagoon (2004-2009, completed)
- Dugualla Heights (2010 and ongoing)

Fish monitoring is also being done this year on the Edgewater Park constructed floodplain channel in the lower mainstem Skagit River. This project was completed in 2005 and is one of the initial SRFB effectiveness monitoring sample sites. Fish monitoring methods and timing from that work were unable to answer questions on densities and duration of fish use important for understanding the success of the project.

Research:

Eight of the 16 specific actions in the research chapter of the Skagit River Chinook Recovery Plan are being implemented (or have been completed). All 8 actions being implemented or completed were the most important to sequence first in plan implementation. The list includes next step research actions for previously listed actions or (in two cases) a completely new research action (not a previously listed topic in Chapter 14 of the Skagit Plan) identified as a result of completed research.

The following research actions identified in the recovery plan have been completed with reports available and are shown as out-going (gray shading) on the Three Year Work Program:

- 14.4.2 Impact of Beaver Activity in the Tidal Delta
- 14.4.3 SRT Evaluation (i.e. Fish-Friendly Tide Gates)
- 14.5.1 Chinook use of pocket estuaries
- 14.5.2 Origin of Chinook salmon in mixed stock nearshore rearing habitats
- 14.5.6 Forage Fish Ecology
- 3. What is the general status of implementation towards your habitat restoration, habitat protection, harvest management, and hatchery management goals? Progress can be tracked in terms of 'not started, little progress, some progress, or complete' or in more detail if you choose.

Please see the discussions above relative to the habitat capital and research/monitoring programs. This narrative does not attempt to speak to harvest and hatchery management goals. As harvest goals are currently limited by habitat, however, habitat restoration and protection is actively and aggressively pursued in the Skagit. We don't yet have the complete yardstick by which to measure our progress, however.

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 Skagit Watershed Council updated our Strategic Approach in 2010 and refined target areas based on the Skagit Chinook Recovery Plan (Table 1). These target areas are divided into three tiers based on their importance to Chinook salmon recovery and on the number of populations that will benefit from habitat protection and restoration actions within each area. While projects in all tiers are consistent with the Chinook Recovery Plan, projects within the Tier 1 target areas are the primary focus as they are the habitats used by all six Skagit Chinook populations.

In terms of sequence, our restoration community is making progress in important areas where they can. Last year we completed a Habitat Protection and Restoration Master Plan for the Middle Skagit River, a large- scale planning effort to identify reaches and projects with the greatest benefit in the Tier 1 floodplain target area of the middle Skagit River. Proposals for two new projects in the identified priority reach were received for SRFB funding this year.

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?

No changes in strategy or salmon recovery approach have occurred in the last year. However, the Watershed Council identified completion of previously-funded projects as a priority for the 2012 SRFB grand round.

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

No organized status and trend monitoring of habitat in the Skagit is conducted, although this is a priority. Sixty percent of the habitat needed for achieving the recovery goals in the Skagit is in protecting existing habitat; so tracking the existing available habitat is an important need for recovery plan implementation. The RITT has also stated this is a major gap throughout Puget Sound.

The number of wild Chinook salmon outmigrants leaving freshwater, as estimated by counts at the Skagit smolt trap, has shown a slightly increasing trend between 1994 and 2010 (WDFW data). However, this trend is not statistically significant. The number of juvenile Chinook (mostly fry migrants) outmigrating from the Skagit watershed increased substantially during the early and mid 2000s from values estimated in the 1990s, but have declined over the past five years (Figure 1). An analysis of whether we would expect to see a signal at the smolt trap because of restoration efforts in freshwater has not been done, and is a monitoring/analysis gap. This analysis would have to account for a number of variables that are known to affect Chinook outmigrant

numbers in the Skagit, especially peak flows and brood-year escapement numbers. That said, the majority of freshwater restoration projects completed to date have been sediment reduction work on forest roads in tributary systems and mainstem floodplain riparian plantings. We are just now seeing more projects that would increase juvenile Chinook freshwater rearing habitat being queued up and implemented.

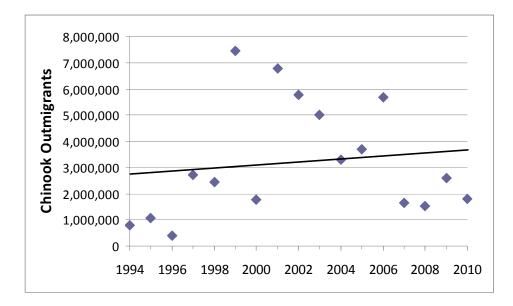


Figure 1. Trends in the abundance of juvenile Chinook salmon outmigrating from the Skagit River, as estimated at the smolt trap in Burlington, 1994 - 2010 (WDFW data).

The Skagit River watershed contains six independent populations of Chinook, the most for any watershed in the Puget Sound DPS. Three of the populations are summer and fall run Chinook, and three of these populations are spring run Chinook. The summer/fall run populations fell to historic low spawner escapement numbers during the 1990s (Figure 2). The upper Skagit summer and lower Skagit fall populations showed substantial increases in abundance and productivity from the late 1990s through 2005. The lower Sauk River summer population showed a positive increase during the period, but not to the extent observed in the other two summer/fall populations. All three populations have declined from 2005 through 2011, with the greatest decline observed in the upper Skagit summer population. Chinook populations throughout the Puget Sound declined during this same period, which indicates external factors including ocean conditions are partially responsible for the decline in summer/fall Chinook escapement in the Skagit. The ocean productivity of Puget Sound Chinook salmon, including the six Skagit stocks, has been declining to among the lowest levels observed over the past 30 years (Ford et al. 2010). It will be important to identify and account for the effects of ocean productivity cycles and hydrological variability (major floods occurred in the Skagit River in 2003 and 2006) on Chinook spawner abundance in order to identify the long-term benefits of restoration on these populations. Flooding in 2006 resulted in low Chinook smolt outmigration numbers as a result of high mortality rates to eggs and fry (Kinsel et al. 2008), which reduced Chinook spawner returns staring in 2009.

The total escapement of summer/fall run Chinook in the Skagit was 5,537 spawners in 2011. This number is just above the 4,800 low abundance threshold level (LAT) established under the Puget Sound Chinook Recovery Plan (Shared Strategy for Puget Sound 2005), below which there is an increased risk of population instability, loss of genetic integrity, and increased probability of extinction (PSIT and WDFW 2010). The summer/fall stocks are considerably below the combined 14,500 upper management threshold (UMT), which is the value used to identify when Chinook stocks achieve optimal productivity under current habitat conditions (PSIT and WDFW 2010). Skagit summer/fall Chinook populations are substantially below UMT, implying that spawner populations are currently at low levels in relation to the habitat capacity of the watershed.

The 5-year mean abundance for upper Skagit summer Chinook is 7,020 spawners for 2011. This population shows a positive trend in long-term productivity, with a 25-year productivity (lambda) value of 1.02 (meaning that the population is increasing at an average annual rate of 2 percent). This population is undergoing a short-term decline in productivity with a lambda value of 0.89. The 5-year mean abundance of the lower Skagit fall population is 1,403 spawners as of 2011. This population has remained stable in term of productivity over the last 25 years with a lambda value of 1.00. The 5-year abundance for the lower Sauk summer Chinook population is currently 353 fish, which is below the low abundance threshold of 400 fish. This means that the lower Sauk summer Chinook have declined to critical levels, and should be identified as a high priority for habitat, harvest, and hatchery based recovery efforts. The lower Sauk has been undergoing a long-term decline, with a 25-year lambda of 0.99. Productivity has experienced a significant short-term decline, with a 10-year lambda of 0.85.

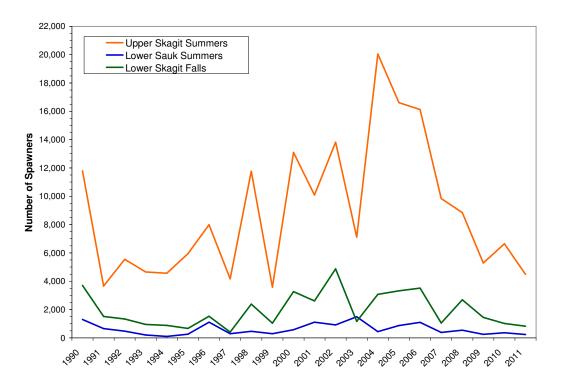


Figure 2. Trends in the abundance of spawners (escapement) for the three summer/fall Chinook populations in the Skagit River watershed, 1990-2011 (WDFW data).

All three spring Chinook populations present in the Skagit watershed have shown a decline since 2005 and 2006 (Figure 3). Like the summer/fall populations, the abundance of the three Skagit spring populations increased from low levels observed in 1990s to much improved abundance values from 2004 through 2007. This suggest that the same trends in ocean conditions and peak floods that impacted the summer/fall populations also impacted the spring run populations. Of the three-populations, the upper Cascade spring run population continues to be doing the best, and the Suiattle spring run population continues to do the worst. The total abundance of spring-run Chinook in 2011 was 825 spawners, which is above the low abundance threshold value of 576 fish. The current abundance of spring-run Chinook is substantially below the upper management threshold of 2,000 spawners. The 5-year abundance values for the upper Cascade, Suiattle, and upper Sauk spring Chinook populations are 288, 212, and 549 spawners, respectively. The upper Cascade population shows a strong long-term increase in productivity as of 2011 with a lambda of 1.03. In comparison, upper Sauk spring run populations have remained relatively constant with a 25-year lambda of 1.00, while the Suiattle population is showing a strong decline in productivity with a 25year lambda of 0.97 over this same period. The Suiattle is also undergoing a substantial

short-term decline in productivity, with a 10-year lambda of 0.94. Based upon these trends, the Suiattle population should be given the highest priority in terms of habitat recovery efforts in the Skagit watershed.

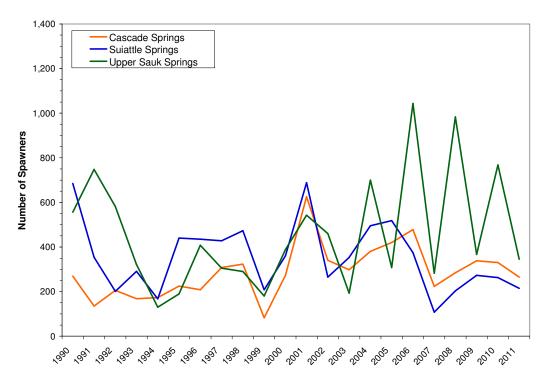
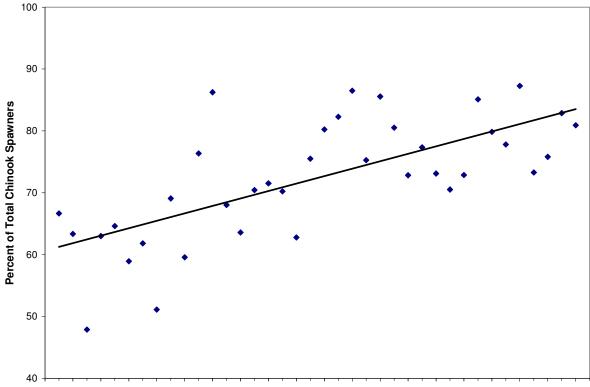


Figure 3. Trends in the abundance of spawners (escapement) for the three spring Chinook populations in the Skagit River watershed, 1990-2011 (WDFW data).

The diversity of six Chinook populations in the Skagit has been undergoing a significant long-term shift, with a trend for increasing dominance by the upper Skagit summer run population (Figure 4). The upper Skagit summer population remains the most dominant in the watershed, presently contributing approximately 80% of the total abundance of Chinook spawners among the six independent populations. The diversity of Chinook in the watershed is undergoing a long-term and statistically significant decline caused by the increasing strength of upper Skagit Chinook summer run, and the increasing weakness of the lower Sauk summer, lower Skagit fall, and Suiattle spring run populations.



1973 1975 1977 1979 1981 1983 1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011

Figure 4. Percentage of Skagit River Chinook spawners that are upper Skagit summer run fish; 1974-2011. Upper Skagit summer run Chinook have been becoming increasingly dominant since the 1970s, indicating that the diversity of the six independent populations is undergoing a long-term decline.

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

The list of challenges to salmon recovery in the Skagit is long and persistent. As lead entity, we ask for and receive support from the RITT and the regional organization as necessary.

In years past we wrote that we were expecting the delayed adaptive management framework from the RITT that would enable us to better develop the information necessary to inform and adaptively manage our Chinook recovery work or the structure by which to engage in the dialog or process. The RITT is expecting to finish that work soon. From a technical standpoint, there is still a need for the region and the state to identify how to roll information up from the watershed level to make any statements about salmon or Chinook recovery at the regional or state levels. A proposal for reporting a limited number of habitat metrics on projects in the Habitat Work Schedule is under discussion at the regional level.

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Three-Year Im	plementation Salmon Plan for the S	kagit Basin 2012-2014								1												
Year 2012 reflects	currently funded projects and those propsed				to the Decement	Diam								Desired						Desired Cost		
Project Type	n ag Project Name	Project I Brief Project Description	Priority tier of	Limiting Factors	es to the Recovery Document Ref for limiting factors	Plan HWS Habitat Type	HWS Activity Type	Project Performance	Primary Species Benefiting	Secondary Species	Current Project	2012 Activity to be funded	2012 Estimated Cost	Project F 2013 Activity to be funded	2013 Estimated	2014 Activity to be funded	2014 Estimated Cost	Likely End Date	Likely Sponsor	Project Cost a Total cost of project	Local share or other funding	Source of funds (PSAR SRFB, other
CAPITAL PRO	JECTS		project	1	1		1		Denenting	Denenang	olulus	1		1	0031	1	0031	1				
Liebitet Cenitel I																						
Habitat Capital I	rojects						1							1				1				
Estuary / Riverine	<u>Ti</u> dal Delta (Tier 1)										Active - post											
Restoration	Wiley Slough Estuary Restoration	Restoration of 160 ac tidal marsh Removal of dredge spoils from west side	1	Loss of habitat	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore	160.6 acres	Chinook		construction activities	Adaptive mgmt	?	Adaptive mgmt & monitoring	?	Monitoring (see below)	?	2015	SRSC; WDFW	\$4,305,197	\$2,284,954	SRFB, PSNEI
Restoration	Swinomish Channel Fill Removal	of Swinomish Channel to restore tidal marsh habitat. Funded in 2007 & 2010	1	2	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore	10.4 acres	Chinook	Chum	Active, construction	Construction, monitoring						2012	SRSC	\$953,600	\$90,000	PSAR, PSCS
Destantion		Improve hydraulic connection between the N. Fork of the Skagit and Swinomish Channel to improve access by juveniles t			Skagit Chinook	Fature date	E-theorem		Obianali		Feasibility/ design grant products	Final feasibility/90%		2	2		2	0045	0000	\$0.544.754	#E44.004	SRFB, PSAR
Restoration	McGlinn Island Causeway	estuarine rearing habitat in Padilla Bay Second phase of restoration on WDFW	1	Loss of habitat	Recovery Plan Skagit Chinook	Estuary river delta	Estuary or nearshore	? 4,668 ft channel	Chinook		overdue	design report Plantings,		?	?		?	2015	SRSC	\$3,511,754	\$544,861	SRFB, PSAR
Restoration	Milltown Island	tidal delta island funded in 2010 Restores 68 acres of farmland within the riverine tidal zonea to channel, scrub- shrub, forested wetland, and tributary		2	Recovery Plan	Estuary river delta	Estuary or nearshore		Chinook	Chum	Construction Post	monitoring						2012	SRSC	\$432,208	\$57,683	NOAA, ESRP
Restoration	Fisher Slough	junction habitats. Construction completed 2011. Moved forward beyond 2015. Acquisition & restoration feasibility complete.	1	Loss of habitat	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore	68 acres	Chinook	Coho	construction grant wrap up							2012	TNC	\$7,700,000	\$2,800,000	SRFB, PSAR, NOAA
Restoration	South Fork Off Channel	Restoration not yet scheduled for reconnection of riverine wetland in freshwater delta. Restoration of tidal marsh on WDFW	1	Loss of habitat	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore	40 acres	Chinook	Chum	Feasibility complete Feasibility			Engr &								<u> </u>
Restoration	Fir Island Farm Restoration (i.e. Dry Slough Tidegate, Goose Reserve)	property currently managed as a snow goose reserve	1	Loss of habitat Floodplain Connectivity &	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore	130 acres	Chinook	Chum	30% design complete Preliminary	Grant apps for final design	\$1,900,000	envirnm studies Grant apps for final design,		60% design & permit apps		2018	WDFW	\$14,730,925		PSAR, SRFB, ESRP
Restoration	Cottonwood Island	Reconnection of relict side channel for rearing habitat Restore and reconnect 268 ac of	1	Function, Loss of habitat	Skagit Chinook Recovery Plan Skagit Chinook	Instream	Instream	170 acres	Chinook	Coho	design complete			permits, construction Grant apps for preliminary,	\$1,500,000	Final design Corps 408 Feasibility		2012	WDFW	\$1,500,000	\$200,000	SRFB, PSAR
Restoration	Deepwater Slough Phase 2	estuarine habitat on South Fork Skagit	1	Loss of habitat		Estuary river delta	Estuary or nearshore	268 acres	Chinook		Conceptual			final design	\$500,000	Study		2018	WDFW	\$4,000,000		PSNER
	TOTAL ESTUARY/TIDAL DELTA CP												\$1,900,000		\$2,000,000		\$0			\$37,133,684	\$5,977,498	
Floodplain (multip	ole Chinook population rearing areas) (Tie	r 1) Restore function to 170 acres of side																				
Restoration	Gilligan Floodplain	channel and floodplain habitat in the Skagit R downstream from Gilligan Creek by removing 170 linear meters of a flood control dike and riprap & replant		1	Skagit Chinook Recovery Plan	Instream	Instream	170 acres	Chinook	Coho	Feasibility/30 % design complete			Design/ Permitting/ Construction	\$2,000,000			2016	SRSC	\$2,060,000	\$309,000	SRFB, PSAR
	Skaqit River Floodplain Restoration	Small scale restoration actions on properties permanently protected for conservation purposes in the Upper and Middle Skagit Floodplain areas; total 25 acres of riparian restoration. Funded in			Skaqit Chinook		Floodplain				Active,	Planting,										
Restoration	(Middle Skagit Floodplain Restoration)	2008 Acquisition & replanting of 211 ac in middle Skagit w/3,460 ft of river front,	1	5	Recovery Plan	Instream	Restoration	25 acres	Chinook	Coho	construction	maintenance						2011	SFEG	\$234,055	\$34,000	SRFB
Restoration	Savage Slough Acquisition & Restoratior (South Skagit Highway Realignment)	portion of Savage Ck., isolated Savage Slough, and assoc. off-channel habitats. 9 Second phase to relocate 1.5 mi highway to improve and reconnect habitat.	/ 1	1	Skagit Chinook Recovery Plan	Instream	Floodplain Restoration	60 acres	Chinook	Steelhead	Funded 2010; acqs complete	Restoration	\$274,000	Preliminary design		Preliminary design		2018	SCL, SRSC, Skagit Co.	\$12,336,208		PSAR, SRFB, SCL
Destantion		Project completed in 2011. Restore riparian area of 5 floodplain properties owned by the USFS along the Skagit R. and major trib junctions; will enhance 74		5	Skagit Chinook	h	Floodplain	74	Obianali	Onto	Completed							2014	0550	¢257.050	\$50.070	DOAD
Restoration Acquisition for	Floodplain Restoration) Skagit Floodplain Habitat Acquisition	Acquisition of floodplain properties for protection of habitat. Funded in 2009	1	5	Recovery Plan Skagit Chinook	Instream	Restoration Land Protected/Aquired/	74 acres	Chinook	Coho	Completed							2011	SFEG	\$357,850	\$53,678	PSAR
Protection	Phase 2	grant round. Restoration of large side chnl complex at confluence of Skagit & Sauk Rivers.	1	1	Recovery Plan Skagit Chinook	Instream	Leased	183 acres	Chinook	Steelhead	Active Feasibility/De	Acquisition		Acquisition				2013	SLTL/SCL	\$1,509,218	\$226,383	SRFB, PSAR
Restoration	Barnaby Reach Restoration	Feasibility study funded in 2009. Restoration of 31 ac of riparian floodplair	1	1	Recovery Plan Skagit Chinook	Instream	Floodplain		Chinook	Steelhead	sign	Feasibility Monitoring,		Design Monitoring,				2013	SRSC	\$285,010	\$42,750	PSAR
Restoration	Sauk River Riparian Restoration	in Sauk R. Funded in 2009 SRFB round		3 Floodplain Connectivity &	Recovery Plan	Riparian	Restoration	31 acres	Chinook		Construction Feasibility & preliminary	maintenance		Final design;				2013	SRSC	\$191,000	\$28,650	PSAR
Restoration	Davis Slough hydrologic connectivity	Improve/restore hydrologic connectivity o mainstem Skagit historic side channel Improve/restore hydrologic connectivity o	1	Function, Loss of habitat Floodplain Connectivity &	Skagit Chinook Recovery Plan	Instream	Floodplain Restoration	4.5 acres	Chinook	Bull Trout	design complete	Grant app for final design	\$199,415	grant apps for construction	\$770,000	Construction		2015	SFEG	\$800,000	\$71,250	SRFB, Skagit Co.
Restoration	Howard Miller Steelhead Park off channe enhancement	Imainstem Skagit historic side channel. Funded in 2010 SRFB grant round. Acquisitions in Tier 1 and 2 floodplain	1	Function, Loss of habitat	Skagit Chinook Recovery Plan	Instream	Floodplain Restoration	11.7 acres	Chinook		Construction	Construction		Construction				2013	SFEG	\$163,000	\$24,450	Skagit County
Acquisition	Skagit Watershed Tier 1 and Tier 2 Floodplain Protection	area targeting properties identified in previous benefit/cost assessment work. Funded 2010 grant round Acquisitions in Tier 1 and 2 floodplain	1	1	Skagit Chinook Recovery Plan	Instream		219 acres	Chinook		Active	Acquisition		Acquisition				2013	SLTL/SCL	\$1,130,130	\$169,520	SRFB, PSAR SCL
Acquisition	Skagit Tier 1 and Tier 2 Floodplain Acquisition II	area targeting properties identified in previous benefit/cost assessment work. Funded 2011 grant round	1	1	Skagit Chinook Recovery Plan	Instream	Land Protected/Aquired/ Leased	193 acres 250 ft of	Chinook		Active	Acquisition		Acquisition		Acquisition		2015	SLTL/SCL	\$1,475,080	\$221,262	SRFB, PSAR SCL
Restoration	Robinson Park Orphan rock removal restoration	Removal of riprap in mainstem side channel and riparian restoration. Funded 2011 SRFB round.	1	1	Skagit Chinook Recovery Plan	Instream		hardened bank removal/~10 acres of floodplain restoration	Chinook		Active	Construction		Construction				2013	Skagit County	\$120,000	\$18,000	SRFB

And and a state in the sta									1						Planting,					1			
															maintenance,								
	Restoration	Hobbit Corners Floodplain Restoration	Riparian restoration of	1	1		Riparian			Chinook		Active			1				2016	SFEG	\$162,308	\$24,346	SRFB
Data Control C			floodplain between Kosbab Slough and																				
				1	1		Instream		40 acres	Chinook		Conceptual						\$150.000	2017	SEEG	\$550.000	\$60.000	SRFB
									1.7 ac habitat;				<u> </u>							0.20			
Name Object of the second secon				1	1		Riparian			Chinook	Steelhead	Proposed		\$348,088					2015	SFEG	\$348,088	\$216,345	SRFB, PSE
PACCUR14 PACCUR14 <				1	1		Pinarian			Chinook	Bull Trout	Proposed		\$59/ 100	Site prep,				2017		\$235 535	\$358 565	SRFB, PSE
Image: Image:<	Restoration			'	1	Recovery Fian	Ripanan	Restoration	npanan	CHIHOOK	Duil Hout	TTOPOSEU	residiation		planning	\$2,770,000	maintenance	\$150,000	2017	5120			SIG D, T OE
Image: Image:<	Nearshore (Tier 2)																						
				_				F ()		01.1	D # T .									0000	6 004.004		SRFB,
No. Participant of the second of	Restoration	Turners Bay	removing road till	2	Loss of habitat	Recovery Plan		Estuary or nearshore	7.8 acres	Chinook	Bull I rout	construction	Construction		Monitoring	needs funding			2012	SRSC	\$904,394		PSNERP
Note: Note: <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>																							
NAME Galaxy Grap Grap Grap Grap <th< td=""><td>Acquisition</td><td></td><td>Protection of 2+ miles of shoreline, 96 ac</td><td></td><td></td><td></td><td></td><td>Nearshore or</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>WSP,</td><td></td><td></td><td>PSAR, CELCP,</td></th<>	Acquisition		Protection of 2+ miles of shoreline, 96 ac					Nearshore or												WSP,			PSAR, CELCP,
Normal	for Protection	Kiket Island Concentation Acquisition		2	Loss of habitat				44.0.00700	Chinook	Bull Trout								2012		\$15,060,000	\$1,000,000	NCWCG, WWRP, ESRP
mann	FIOLECIION	Kiket Island Conservatori Acquisition		2	LUSS OF Habitat	Recovery Flan	Nearshore	FIOLECIEU	44.9 acres	CHIHOOK	Buil Hout	complete	Fidililing						2012	Tibe	\$13,000,000	φ1,000,000	WWKF, ESKF
Description process						Skagit Chinook											Grant app for						
	Restoration	Similk Bay	channels	2	Loss of habitat			Estuary or nearshore	23.6 acres	Chinook		Conceptual						\$150,000	2015	SRSC	not evaluated		
Image: second																							
			funding considered. Feasibility & design																				
Batter Open the second open second ope						Skagit Chinook							Desian/										
Number of the production	Restoration	Dugualla Heights Lagoon Restoration		2	Loss of habitat			Estuary or nearshore	25 acres	Chinook		Active			Construction		Construction		2015	WCLT			SRFB, PSAR
And matrix Answer Answer <td></td> <td>TOTAL NEARSHORE TIER 2</td> <td></td> <td>\$0</td> <td></td> <td>\$0</td> <td></td> <td>\$150,000</td> <td></td> <td></td> <td>\$17,720,110</td> <td>\$1,241,557</td> <td></td>		TOTAL NEARSHORE TIER 2												\$0		\$0		\$150,000			\$17,720,110	\$1,241,557	
Normal bases Normal bases<	Floodplain (single C	hinook population rearing areas) Tier 2																					
Normal water Normal water<			Instream & floodplain restoration in lower																				
Northold			Day Creek funded in two phases but						4.7 m ³				Dinnet		Dimoni								
Identifie Spice (1985) (1985) (1986) Process (1985) (1985) Process (1985) (1985) Process (1985) (1985) (1985) Process (1985)						Skagit Chinook																	SRFB, PSAR,
But of the flag water Description Description<	Restoration	Day Creek Habitat Restoration		2	1		Instream	Instream	riparian	Chinook		Active					Construction		2015	SFEG	\$407,160	\$61,100	DOE
Image: Note of the set of the s		Lower Finney Supplemental Instream	Design and installation of LWD jams in			Skagit Chinook																	
Burner of the starting of the start and starting of the starting of the starting of the			chinook tributary	2	5		Instream	Instream	LWD jams		Steelhead	Construction	Construction						2012	SFEG	\$283,200	\$42,480	SRFB, PSAR
Nume Cash Maryola Open Cash Maryola Open Cash Maryola Open Cash Maryola Adds Adds Adds Adds Adds Maryola Subject Subject <t< td=""><td></td><td></td><td></td><td></td><td>Floodplain</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Grant apps for</td><td></td><td>Add'l</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>					Floodplain										Grant apps for		Add'l						
Camber of Modeling of Margine Statute of Margin								Els s de la is				A											
				2			Instream			Coho	Chinook		Planning			\$395,000			2017	SRSC	\$1,044,500		SRFB, Skagit Co.
Balancer Read Data Allow Discovery Asso Data Allow Dis			Delegate Web at Oracli to bistoria ab annali			Olya sit Ohim a ala						Antina											
Instance Proof Right part	Restoration	Illabot Creek alluvial fan restoration		2	1		Instream	Instream		Chinook	Steelhead		Permitting		Construction	\$950,000			2017	SRSC	\$1,558,572	\$248,966	SRFB, PSAR
Restance Provide Statistic for consistency of the statistic for consis for consistency of the statis for consistency of the s																							
Description Description Description Description Partial Description Partial Description Partial Description Partial Description Descripti	Restoration	Finney Riparian		2	3	Recovery Plan	Riparian	Riparian			Steelhead	Conceptual			construction	\$175,000	Site Planning		2017	SFEG	\$175,000	\$0	PSAR
Appendix Provide frage to import adge to			Downey Cr to minimize impacts to 3 ac							Spring													
Outside Name Research (rights to group sign sign halfs) 2 1 Research (rights to group sign halfs) 2 1	Restoration	Downey Creek Crossing	alluvial fan.	2	1		Instream	Instream	alluvial fan	Chinook	Bull Trout				Construction				2015	SRSC/USFS	\$983,000	\$478,000	SRFB, PSAR
Answer Answer<	Restoration		Removal of riprap to improve edge habitat	2	1		Instream	Instream	900 feet	Chinook					Construction		Construction		2014	SRSC/USFS			SRFB, PSAR
Actional III and Case State decomposing of a point of the point o		TOTAL FLOODPLAIN TIER 2												\$0		\$1,520,000					\$4,744,107	\$873,637	
Image: space of the properties of the proproproproperties of the properties of the properise of t	Sediment & Hydrolo	gy Impaired Watersheds (restoration act																					
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Record M Record M Record M Record M Record M Record M Display is an interval method in monormality is an interval method. Display is an interval method. Displa						Skogit Chinaak																	
Beaterial Open Gased Reads Interfigued reads Interfigued reads Second Pail Chronic Mathematical Second Pail Conceptual	Restoration	Illabot Creek Road decommissioning		3		Recovery Plan	Uplands	Sediment Reduction		Chinook	Steelhead	Completed							2012	SCD/USFS	\$190,000		PSAR
Selection Soliding - Ling - Soliding - Ling - Soliding - Ling - Soliding - Ling -		Lawer Casaada Baada		2	4		Liplando	Sodimont Poduction	1.1 miles	Chinook	Stoolhood	Concentual				\$50,000	Construction		2014		\$50,000	\$7,500	SRFB
Ask Ands and Doc dates identified records A discrete Secure / Pain Company	Residiation	Lower Cascade Roads		3	4	Recovery Flan	opiarius	Sediment Reduction	1.1 miles	CHIHOOK	Steelineau	Conceptual				\$50,000	CONSTRUCTION		2014	SCL	\$30,000	\$7,500	SKFB
Restand State Roads plan 3 4 Restand Property Update Roads Conceptual Conceptual Conceptual Conceptual State Concenteteeee State Conceptual						Skagit Chinook			25 miles of						Grant anne for								
Restored Loper Salk Ecolor Condition Chince Stephen Chince Stephen Chince Stephen Chince Stephen	Restoration	Sauk Roads	plan	3	4	Recovery Plan	Uplands	Sediment Reduction		Chinook	Steelhead	Conceptual				\$300,000	Data Collection		2015	SRSC/USFS	\$300,000	\$45,000	SRFB
	Restoration	Upper Sauk Frosion Control		3	4		Unlands	Sediment Reduction	7 Miles	Chinook	Steelhead	Conceptual				\$400.000	Construction		2015	SRSC/USES	\$400.000	\$60.000	SRFB
Harrest Depict Line				5			opiarido	Seamon reduction		STITUOK		Conceptual		\$0			0001001011	\$0	2010	0100/00/0			
Harrest Depict Line	Hatchery Conital B	Projects									1								I				
Hydroper Hydroper <th< td=""><td>nationary capital P</td><td></td><td></td><td></td><td></td><td></td><td> </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	nationary capital P						 																
TOTAL CAPTUR PROCESS Anden in an interview of the state of the	Harvest Capital Pro	ojects	1					1	1	1	1	1	1		1	·		1					1
TOTAL CAPTUR PROCESS Anden in an interview of the state of the	Hydropower Capit	al Projects			l		I	I	I	I	1	I		I	I				I			l	
Ker YoR Indexton Ind																							
Habital Capital Projects Primary Limiting Factor I <t< td=""><td>TOTAL CAPITAL PR</td><td>OJECTS AND PROGRAMS</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td> </td><td></td><td>\$3,315,603</td><td></td><td>\$7,040,000</td><td></td><td>\$300,000</td><td></td><td></td><td>\$82,495,383</td><td>\$10,063,391</td><td></td></t<>	TOTAL CAPITAL PR	OJECTS AND PROGRAMS												\$3,315,603		\$7,040,000		\$300,000			\$82,495,383	\$10,063,391	
Amount of LE SRFB/PSAR funds 1 Degraded findedplain and in-invenanel structure W-Wetland habitaty projects (acres created finated) Appl. Acquisition I											-												
Adde in 2012 2 - Degraded nearshore and estande conditions and loss of associated habitat E - Estuarine habitat projects (acres metated) AP - Acquisition for protection AP - Acquisition for restoration AP - Acquisition for restoration for restoration AP - Acquisition for restoration AP - Acquisition for restoration AP - Acquisition for restoration A - Acquisition restoration <td< td=""><td></td><td></td><td></td><td>structure</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Acquisition</td><td></td><td></td><td></td><td> </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>				structure								Acquisition											
Removed from 2012 list for reasons described 3 · Riparian area degradation and loss of in-river large woody debris L - Land acquisition projects (acres / miles acquired for protoction and/or restoration AR-Acquisition for restoration R - Restardin C <td< td=""><td>Added</td><td>in 2012</td><td>2 - Degraded nearshore and estuarine condi</td><td>itions and</td><td></td><td></td><td>E - Estuarine habita</td><td>at projects (acres creat</td><td>ed and treated)</td><td></td><td></td><td>AP- Acquisitio</td><td>n for protection</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Added	in 2012	2 - Degraded nearshore and estuarine condi	itions and			E - Estuarine habita	at projects (acres creat	ed and treated)			AP- Acquisitio	n for protection										
Proposed for funding within next 3 years 5 - Degrade water quality and temperature 0 <t< td=""><td></td><td></td><td></td><td></td><td>e woody debris</td><td><u> </u></td><td></td><td></td><td></td><td>ection and/or r</td><td>restoration)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>I</td><td><u> </u></td><td></td><td></td></t<>					e woody debris	<u> </u>				ection and/or r	restoration)									I	<u> </u>		
ind			5 - Degraded water quality and temperature				U - Upland habitat	projects (acres treated)															
Image: series of the series of th	<u> </u>		6 - Impaired instream flows]									as and tributorics	to Purcet Sound									
Image: Second													and inducanes	to r uget Soullu									
Outreach & Education Image: Constraint of the constraint]			<u> </u>	<u> </u>															
	NON-CAPITAL PI	ROGRAMS																					
	Guireach & Educat																						
	Habitat protection	۱ ۱	· · ·			·			1		1			ı					·			·	1

Harvest Management support Image in the support	2012 Activity 2012 Cost 2013 Activity 2013 Estimated Cost 2014 Activity 2014 Cost
Instream Flow protection Project Type Project Type <th>2012 Activity 2012 2013 Activity 2013 2014 Activity 2014 Estimated to be funded to</th>	2012 Activity 2012 2013 Activity 2013 2014 Activity 2014 Estimated to be funded to
Instream Flow protection Instream Flow p	2012 Activity 2012 2013 Activity 2013 2014 Activity 2014 Estimated to be funded to
Image: Project Type Plan Project Name Brief Project Description Project Description Project Type Project	2012 Activity 2012 2013 Activity 2013 2014 Activity 2014 Estimated to be funded to
Project Type Plan Categ or Project Name Brief Project Description Priority tier of project Limiting Factors Document Ref for limiting factors HWS Activity Type Project Performance Project Secondary Species Benefiting Secondary Species Benefiting Current Project Status Future Habitat Assessments Update of 10+ year old assessment of Skagit River sub-basins following road Image: Current project and proje	2012 Activity 2012 2013 Activity 2013 2014 Activity 2014 Estimated to be funded to
Project Type Categ ory Project Name Brief Project Description tier of project Limiting Factors Document Ker for limiting factors HWS Addiat Type HWS Activity Type Project Performance Species Benefiting Species Benefiting Species Benefiting Project Status Future Habitat Project Development V <td< th=""><th>to be funded Estimated Likely End Likely Sponsor Total cost of Local share or funds (PS</th></td<>	to be funded Estimated Likely End Likely Sponsor Total cost of Local share or funds (PS
Assessments Update of 10+ year old assessment of Skagit River sub-basins following road	
Update of 10+ year old assessment of Skagit River sub-basins following road	
Skagit River sub-basins following road	
sediment reduction work and new road	
Planning Sediment Impaired Watersheds inventories Conceptual	al \$120,000 Data Collection 2014 \$120,000 \$120,000
Assessment completed July 2011. Assessment, identify restoration actions,	Skagit C
Planning Middle Skagit Project Development develop reach-specific plans 1 Completed Placeholder for extending FVCOM 3D Placeholder 5D Placeholder 5D Pla	
hydraulic modeling across the entire	
geomorphic delta of the Skagit River to evaluate synergy between proposed	
projects and their affects on geomorphic evolution across the delta, especially in	Data Collection
Planning Skagit Delta Hydraulic Model relation to flood dynamics. Conceptual	al \$350,000 & Analysis 2015 FFF \$350,000 \$50,000
Update 1998 inventory of hydromodifications; middle Skagit update	
completed in early 2010 as part of Middle	al ? Data Collection 2014 \$50,000 \$0
Planning Riprap inventory Skagit project development grant Conceptual Found first on 2007 list; no description or Image: Conceptual Conceptual	al ? Data Collection 2014 \$50,000 \$0
Floodplain Productivity Assessment progress so moving out beyond 2015	
TOTAL ASSESSMENTS	\$0 \$470,000 \$0 \$716,000 \$200,000
Watershed Plan Implementation and Coordination	
Lead entity base grant (2011-2013)	\$80,000 \$80,000 Ongoing \$160,000
Lead entity capacity (PSAR) (2011-2013)	\$171,315 \$171,315 Ongoing \$342,630
NEP	\$45,345 \$45,345
TOTAL WATERSHED IMPL & COORD	\$296,660 \$251,315 \$547,975
14 Research	
14 Research 14.3 Freshwater Rearing	
14.3.1 Skagit	Phase 1 SRSC, USIT, SCL;
Study of life stages, habitats, capacity Chinook Recovery Research Yearling Chinook Research and survival of Skagit yearling Chinook data gap Plan Chinook Active	Data collection Phase 2 UW, & results \$590,000 2012
14.4 Tidal Delta Reariang	\$0 \$0
Part of plan action 14.4.1; being 14.4.1 Skagit	
Research habitats Consortium data gap Plan Chinook Active	Implementation \$400,000 Ongoing SCSC \$400,000
Impacts of Beaver Activity in the Tidal Plan action 14.4.2; study published Skagit Chinook Skagit Chinook Chinook Completed	d \$590,000
Initial study of fish-friendly tidegates 14.4.3 Skagit funded in 2010 and completed in Jan. Chinook Recovery	
Research SRT Evaluation 2012. Additional work anticipated data gap Plan Chinook completed Update of empirical model used to App D, Skagit App D, S	
Update delta juvenile Chinook capacity estimate juvenile Chinook habitat capacity Chinook Recovey	Analysis & NOAA, WDFW)
Research model in the Skagit delta data gap Plan Chinook Proposed No update available on progress on this No update available on progress on this Image: Chinook Image: Chinok Image: Chi	
Research Salmon habitat and agriculture research topic at this time. data gap Chinook Proposed	d \$0
14.5 Nearshore Rearing Origin of Juvenile Chinook in WRIA 6 Study completed. Part of Plan actions Skagit Chinook Chinook Control Contro Contro Control Cont	
Research Nearshore Study completed. Part of Plan actions data gap Recovery Plan Chinook Completed WRIA2 Habitat Based Assessment of Study completed. Part of Plan actions Skagit Chinook Chinook Completed	id ? SRSC \$261,884
Research Juvenile Salmon 14.5.2 data gap Recovery Plan Chinook Completed Chinook Completed	1d ? SRSC \$821,006
Forage fish use of nearshore habitats	
were studied as part of plan action 14.5.2 for the San Juan Islands. Three species	
of forage fish (herring, smelt, and sand 14.5.6 Skagit lance) were associated with different Chinook Recovery	
Research Forage Fish Ecology geomorphic shoreline types in this study. data gap Plan Chinook Completed	Id Tulalip, SRSC,
New research on small coastal streams	NWIFC,
Fry migrant Chinook use of non-natal study; non-natal use of small coastal Result of 14.5.1 in	Whidbey Watershed
Research small coastal streams streams by fry migrant Chinook. data gap Recovery Plan Chinook Active Part of plan action 14.5.3. NOAA and Pa	Data collection ? Stewards
SRSC have collected the necessary data for this study, but do not currently have Skagit Chinook	Analysis and
Research Hatchery/Wild Fish Interactions funding to complete it at this time data gap Recovey Plan Chinook Active	
Research Hatchery/Wild Fish Interactions funding to complete it at this time data gap Recover Plan Chinook Active Spawing and egg survival aspects of forage fish ecology being studied as part Spawing and egg survival aspects of forage fish ecology being studied as part Image: Chinook studied as part <	
Spawing and egg survival aspects of forage fish ecology being studied as part of a shoreline armoring research project.	SRSC 11W
Spawing and egg survival aspects of forage fish ecology being studied as part of a shoreline armorning research project. Forage fish egg abundance and survival related to amored and natural beaches Result of 14.5.6 in	SRSC, UW, Swinomish, Tukelie and
Spawing and egg survival aspects of forage fish ecology being studied as part of a shoreline armoring research project. Forage Fish abundance & survival related to amored and natural beaches Result of 14.5.6 in Skagit Chinook Result of	Data design Swinomish, Tulalip, and
Research Spawing and egg survival aspects of forage fish ecology being studied as part of a shoreline armoring research project. Result of 14.5.6 in Skagit Chinook Result	Data design Swinomish, Tulalip, and
Research armored shorelines Spawing and egg survival aspects of forage fish ecology being studied as part of a shoreline armoring research project. Result of 14.5.6 in Skagit Chinook Chinook Active	Data design Swinomish, Tulalip, and

																						T
	TOTAL SKAGIT RESEARCH												\$400,000		\$100,000		\$1,770,000			\$1,626,890	\$0	
																	I					
15 Monitoring		1		1	1	1	1	1	1	1		1	1			I	T	1		1		1
15.5 Delta and N	earshore Rearing			1				1				1	1					1				+
	J																					
		Fish monitoring; action 15.5 in recovery			App. E, Skagit								A 150 000				0 450 000		NOAA, WDFW,			
Monitoring	Intensively Monitored Watershed (IMW)	plan Supports update to action 15.5 in	1		Chinook Rec. Plan	Estuary river delta	Estuary or nearshore		Chinook		Monitoring	Monitoring	\$450,000	Monitoring	\$450,000	Monitoring	\$450,000	on-going	SRSC	?		SRFB, ?
		Supports update to action 15.5 in recovery plan; incorporates genetic																				
		analysis from tissue samples collected at																				
		each of the sampling areas (lower river,																				
	Incorporate spawning population-based	tidal delta, nearshore, and offshore) into the IMW to refine the monitoring results to			Action 15.5 App E, Skagit Chinook							Grant		Data collection		Data collection			NOAA, WDFW,			
Research	monitoring into IMW Monitoring	be at the spawning population scale.	1		Rec. Plan	Estuary river delta	Estuary or nearshore		Chinook		Conceptual	applications	\$150,000	& lab	\$150,000	& lab		on-going	SRSC	?		
					Skagit Chinook																	
Monitoring	South Fork dike setback	Fish monitoring post-construction (2012)		Loss of habitat	Recovery Plan						Monitoring	Monitoring	\$10,730					2012	SRSC	\$10,730	\$10,730	SWC
	Smokehouse Floodplain (i.e. Fornsby Ck				Skagit Chinook																	
Monitoring	SRT, Swinomish Channel Restoration)	Fish monitoring at Fornsby Ck SRTs	1	Loss of habitat		Estuary river delta	Estuary or nearshore	50 acres	Chinook	Chum	Completed	Monitoring	\$20,000	Monitoring	\$20,000	Monitoring	\$20,000	2012	SRSC			<u> </u>
		Fish mariterian and 9 meet another time			Olyanit Ohimaaly						Post											
Monitoring	Fisher Slough	Fish monitoring pre & post-construction (2009 & ongoing)	1	Loss of habitat	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore	68 acres	Chinook	Coho	construction activities	Monitoring	\$50,000	Monitoring	\$50,000	Monitoring	\$50,000	2015	TNC	\$150,000		NOAA
literities	Handr Glodgi	(coor a origonity)									Post	j										
											construction											
Monitoring	Wiley Slough Estuary Restoration	Fish monitoring post-construction (2012, 2013)	1	Loss of habitat	Skagit Chinook Recovery Plan	Estuary river delta	Estuary or nearshore				activities & monitoring	Monitoring	\$20,000	Monitoring	\$20,000			2013	SRSC	\$40.000		
Wormoning	Whey Slough Estuary Residiation	Fish monitoring post-construction (2012,		Loss of Habitat	Skagit Chinook	Lotdary fiver delta	Latury of hearshold		1		mormoring	Wormoring	φ20,000	wormoning	φ20,000			2013	0100	φ+0,000		+
Monitoring	Milltown Island Estuary Restoration	2013)	1	Loss of habitat	Recovery Plan	Estuary river delta	Estuary or nearshore				Monitoring	Monitoring	\$20,000	Monitoring	\$20,000			2013	SRSC	\$40,000		
Monitoring	Swinomish Channel Fill Removal	Fish monitoring post-construction (2009- 2012)	4	Loss of habitat	Skagit Chinook Recovery Plan						Monitoring	Monitoring	\$20,000	Monitoring	\$20,000			2013	SRSC	\$40,000		
Monitoring	Swinomish Charner Fill Kemoval	Pocket estuary restoration monitoring	1	LOSS OF Habitat	Skagit Chinook	Nearshore					wonitoning	wontoning	\$20,000	wontoning	\$20,000			2013	3630	\$40,000		
Monitoring	Lone Tree lagoon	completed 2004-2009	2	Loss of habitat	Recovery Plan	embayments	Estuary or nearshore		Chinook	Bull Trout	Completed							2010	SRSC	\$30,000	\$20,000	
		Pocket estuary restoration post-	2		Skagit Chinook	Nearshore							005.000		005 000		005.000		0000			
Monitoring	Crescent Harbor	construction (2010 & ongoing) Fish monitoring pre & post-construction	2	Loss of habitat	Recovery Plan Skagit Chinook	embayments Nearshore	Estuary or nearshore		-		Monitoring	Monitoring	\$35,000	Monitoring	\$35,000	Monitoring	\$35,000	on-going	SRSC			+
Monitoring	Dugualla Heights Lagoon Restoration	(2010 & ongoing)	2	Loss of habitat		embayments	Estuary or nearshore				Monitoring	Monitoring	\$35,000	Monitoring	\$35,000	Monitoring	\$35,000	on-going	SRSC			
					Skagit Chinook																	
Monitoring	Edgewater constructed off-channel	Fish monitoring post-construction (2012)	1	Loss of habitat	Recovery Plan	Instream	Instream		Chinook		Monitoring	Monitoring	\$30,730					2012	SRSC	\$30,730	\$30,730	SWC
		Reported completed 30 March 2009. Habitat Monitoring Strategy for the Tidal																				
		Skagit Delta: Integrating Landscape and																				
Monitoring	project off monitoring from our of	Site-scale Perspectives, W. G. Hood,				Dianaina	Estuary or poorshore															
Monitoring	project eff monitoring framework	SRSC Being removed from list as redundant				Planning	Estuary or nearshore															+
	Skagit delta habitat monitoring strategy	with new reporting above.																		\$0		
45.0 411 1 16 01				-																		+
15.6 All Life Stag	es	Listed here as a critical monitoring cap as								-												+
		Listed here as a critical monitoring gap as tracking the existing available habitat is																				
		an important need for recovery plan			Skagit Chinook																	
Monitoring	Habitat status and trends monitoring	implementation	1	-	Recovery Plan						Conceptual									?		+
	TOTAL MONITORING					-				-		+	\$841,460		\$800,000	+	\$590,000			\$341,460	\$61,460	+
																					+	
TOTAL NON-C	APITAL NEED:			1		1		1	1	1	1	1	\$1,538,120		\$1,621,315		\$2,360,000			\$3,232,325	\$261,460	(
																						+
	L & NON-CAPITAL NEED:	I			I	1	1	1	1				\$4,853,723	1	\$8,661,315	i	\$2,660,000	I		\$85,727,708	\$10,324,851	<u></u>
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