SQUAXIN ISLAND TRIBE

RESOLUTION NO. 12-08

of the

SQUAXIN ISLAND TRIBAL COUNCIL

WHEREAS, the Squaxin Island Tribal Council is the Governing Body of the Squaxin Island Tribe, its members, its lands, its enterprises and its agencies by the authority of the Constitution and Bylaws of the Squaxin Island Tribe, as approved and adopted by the General Body and the Secretary of the Interior on July 8, 1965; **and**

WHEREAS, under the Constitution, Bylaws and inherent sovereignty of the Tribe, the Squaxin Island Tribal Council is charged with the duty of protecting the health, security, education and general welfare of the tribal members, and with protecting and managing the lands and treaty resources and rights of the Tribe; **and**

WHEREAS, the Squaxin Island Tribal Council has been entrusted with the creation of ordinances and resolutions in order to fulfill their duty of protecting the health, security, education, and general welfare of tribal members, and of protecting and managing the lands and treaty resources of the Tribe; **and**

WHEREAS, the Squaxin Island Tribal Council adopts by reference the reports listed in the bibliography of the Action Plan as representing the current best available science for South Puget Sound; **and**

WHEREAS, the Squaxin Island Tribal Council has approved the Natural Resources Department workplan to promote the protection, restoration and enhancement of the productive capacity of the Tribe's homeland, treaty resources and fish & wildlife habitat.

NOW THEREFORE BE IT RESOLVED to approve, adopt and implement the *South Puget Sound Watersheds Conservaiton Action Plan* to further the Natural Resources Department workplan.

CERTIFICATION

The Squaxin Island Tribal Council does hereby certify that the foregoing Resolution was adopted ~~at the regular meeting~~ via telephone poll of the Squaxin Island Tribal Council, held on this 21 day of February 2012, at which time a quorum was present and was passed by a vote of 5 for and 0 against with 0 abstentions.

David Lopeman, Chairman

Attested by:
Pete Kruger., Secretary

Arnold Cooper, Vice Chairman

Squaxin island Tribe
2012-2014 South Puget Sound Watersheds Conservation Action Plan

John Konovsky
Environmental Program Manager

INTRODUCTION: the Squaxin Island Tribe owns over 3,000 acres of Indian land around the town of Shelton, Washington and on Squaxin Island in the headwaters of the Salish Sea. The Tribe also holds legal interest in a 640,000 acre Treaty Fishing Area that encompasses all the inlets of South Puget Sound. It includes all marine waters south of the Tacoma Narrows and tributary fresh waters in WRIA's 13, 14 and 15.

Since time immemorial, our maritime ancestors from *Noo-Seh-Chatl*– Henderson Inlet, *Steh-Chass*– Budd Inlet, *Squi-Aitl*– Eld Inlet, *T'Peeksin*– Totten Inlet, *Sa-Heh-Wa-Mish*– Hammersley Inlet, *Squawksin*– Case Inlet, and *S'Hotle-Ma-Mish*– Carr Inlet have lived and prospered here. Salmon, shellfish and water have always been and will forever be central to our cultural traditions and existence, thus we know ourselves as the "People of the Water."

In 1854, our representatives signed the Treaty of Medicine Creek reserving a right to harvest finfish and shellfish for subsistence, ceremonial and commercial purposes in all South Sound waters (*among other things*), and the U.S. Supreme Court has upheld that right. Implicit is not only that there shall always be finfish to catch and shellfish to dig, but both shall also be safe to eat.

Salmon fishing and shellfish digging are the principle means of economic subsistence for many Tribal members. The Tribe retains a vested interest in factors that affect water and habitat and, consequently, the continued production of finfish and shellfish resources throughout the Treaty Fishing Area.

The Tribe has co-management responsibilities with the State of Washington for these natural resources. That responsibility includes ensuring the requisite environmental quality necessary to sustain them consistent with the Treaty and federal court rulings.

The federal government, and through its delegated authority, the State of Washington has Treaty obligations to maintain the promised outcome of "abundant fish and shellfish safe to harvest and eat." However, the current condition of natural resources in South Sound falls far short of our expectations and government obligations.

An earlier Squaxin Island Tribe non-point source water pollution assessment completed for the entire Treaty Fishing Area found every major watershed and inlet to have at least one impaired water body that failed to meet state water quality standards, sediment management standards or Tribal natural resource goals. Pathogens, fine sediments, nutrients and heat (*hot summer stream water temperatures*) were identified as common pollutants throughout all watersheds.

Lack of in-stream large woody debris and diminished stream flows exacerbate these impairments, while low dissolved oxygen levels are a consequence. Toxic constituents emanating from urbanized harbors contribute to safety concerns around Tribal consumption of finfish and shellfish.

A region-wide trend toward lower pH levels in marine waters and the consequent acidification of South Sound is the most recently recognized impairment. Other concerns potentially related to climate change are an increase in *Vibrio parahaemolyticus* outbreaks and several different kinds of harmful algal blooms closing shellfish harvest.

Primary sources of surface and groundwater pollution and associated fish and wildlife habitat destruction include predominately backyard agricultural activities such as streamside livestock grazing and poor livestock waste management. The list also includes failing on-site septic systems, storm water runoff, land use practices such as grading, clearing and diking—particularly in riparian areas, poorly maintained forest roads, and hardening or otherwise disturbing the ecological functions of marine shorelines.

Toxics in Inner Budd Inlet and Shelton Harbor are largely legacy constituents with ongoing clean-up efforts managed by the Department of Ecology through the Puget Sound Initiative.

Available stream gage data suggests that all streams and rivers in South Sound (*except for the regulated Nisqually*) increasingly fail to meet statutory minimum flows or Tribal natural resource goals year around. The Deschutes River has one of the strongest downward trends of all rivers in Western Washington and has coincidently, one of the fastest increases in the number of permit-exempt wells over the last 50 years. The detriment of diminished groundwater influx and associated low stream flows is amplified by a simplified channel morphology driven by a lack of recruitable large woody debris.

The ultimate source of all environmental impairments is the increase in impervious surfaces and the decrease in forest cover that has occurred since the arrival of Euro-Americans. Whenever there is > 10% impervious surfaces and < 65% forest cover, natural hydrologic regimes are disrupted leading to severely degraded and often unrecoverable fish and wildlife habitat.

The Treaty Fishing Area has several basins with < 10% impervious surface and > 65% forest cover. Key properties at critical locations in these basins are high priorities to protect through acquisition or conservation easement to maintain the low levels of development necessary to maintain nearly full ecological functions.

The Tribe has worked diligently to improve the ecological health of South Puget Sound through monitoring and assessment, project identification, prioritization and development, and procurement of grant funds to implement strategic protection, restoration and enhancement actions. This has been accomplished through a broad partnership consisting of federal, state

and local government agencies, conservation districts, land trusts, salmon enhancement groups and other non-governmental organizations and private businesses.

Some recent successes include:

- ✓ Acquired:
  - 150 acres of priority fish & wildlife corridor between Budd and Henderson Inlets.
  - 163 acres of priority riparian and near shore habitat in the Oakland Bay Watershed.
  - 185 acres of priority riparian habitat in the Deschutes Watershed.
  - 3 acres of priority pocket estuary habitat in Budd Inlet.

- ✓ Completed TMDL technical reports for:
  - Budd Inlet/Deschutes River *(multi-parameter)*.
  - Cranberry, Johns & Mill Creeks (*temperature*).
  - Henderson Inlet (*pathogens*).
  - Oakland Bay (*pathogens*).
  - Skookum Creek (*temperature*).
  - Skookum Inlet (*pathogens*).

- ✓ Developed:
  - Restoration plan for Budd Inlet.
  - Restoration plan for Shelton Harbor.
  - Restoration science for Deschutes Estuary.

- ✓ Implemented a social marketing program to increase compliance for on-site septic system owners in Oakland Bay.
- ✓ Increased coho smolt productivity by two-three orders of magnitude in Goldsborough Creek after dam removal in 2001.
- ✓ Mapped coho juvenile use of summer thermal refuges in the Deschutes River.
- ✓ Removed bulkhead & shoreline armoring on Squaxin Island.
- ✓ Restored of 1000' of Skookum Creek on the Squaxin Reservation.
- ✓ Upgraded growing area classifications for 550 acres of shellfish beds around South Sound.
- ✓ Use reclaimed water to irrigate Tribal golf course to minimize diminishment of flows in Skookum Creek.

Finally, this Conservation Plan serves as a basis for funding near term future actions and for several other purposes. It documents the 2012-14 Squaxin Island Tribe priorities for biological recovery of South Puget Sound and our local perspective on a partial list of actions necessary to address Treaty Rights at Risk. These priorities shall be incorporated into the Puget Sound Action Agenda and associated strategic initiative. This document shall also serve as the Recreation and Conservation Office-required comprehensive plan and it comprises a summary

of the Environmental Protection Agency-required 319 Nonpoint Source Management Plan implementation recommendations.

GOALS & OBJECTIVES: the overall goal of this conservation plan is to begin to restore abundant finfisheries and enhance shellfisheries in South Sound commensurate with Treaty obligations. Such accomplishments will also require attainment of water quality and sediment managements standards, and habitat benchmarks in every water body. The non-Indian community will also be well-served and protected by attaining these goals.

The immediate objectives are to 1) achieve "approved" harvest status for 1,733 acres (*1,480 acres of which are in Oakland Bay*) of South Sound shellfish growing areas currently classified as conditional by the Department of Health; that will bring the total "approved" acreage to nearly 32,500, and 2) have sufficient returning adult salmonids to provide for escapement quotas, recreational and non-Indian commercial harvest, and for Squaxin fishers to catch 60,000 chum, 50,000 coho, and 12,000 chinook each year.

South Sound salmon stocks of interest to the Squaxin Island Tribe include: Carr Inlet Fall Chum, Case Inlet Fall Chum, Case Inlet Summer Chum, Deschutes Coho, Deschutes Hatchery Chinook, Eld Inlet Fall Chum, Goldsborough/Shelton Creeks Fall Chum, Hammersley Inlet Summer Chum, Henderson Inlet Fall Chum, Johns/Mill Creeks Fall Chum, Skookum Inlet Fall Chum, South Sound Coho, Squaxin Netpen Coho, Totten Inlet Fall Chum, Upper Skookum Creek Fall Chum and unknown steelhead runs.

Chum stocks are generally stable, but coho are on the verge of extinction. Like their naturally spawning and wild counterparts, hatchery salmon are also threatened. Coho smolts and chinook yearlings do not seem to survive the journey between exiting their natal waters or release points and passing the Tacoma Narrows. The identification and correction of whatever environmental deficiencies or impairments that contribute to smolt mortality in marine waters of South Sound is the number one priority to address in support of Treaty Rights and abundant fisheries.

The mortality issue might affect more than salmonids with natal waters in South Sound. Smolts, including ESA-listed stocks, from elsewhere in Puget Sound like the Puyallup River are frequently found in South Sound estuaries before they head to the open ocean. This also calls out the importance of South Sound estuaries not just to support the local stocks, but for the recovery of all Puget Sound salmonid stocks.

Acquisition or conservation of lands critical to permanently protect salmon habitat and shellfish beds is another significant priority for the Squaxin Island Tribe to recover an abundant harvest. In this planning period, emphasis will be placed in three watersheds that have relatively low levels of impervious surfaces and significant forest cover making them relatively easy and inexpensive to recover—Hammersley Inlet/Oakland Bay (*Johns Creek*), Skookum Inlet (*Skookum Creek*), and Budd Inlet (*Deschutes River*).

In addition, a second tier of future acquisition priorities has been identified in the capital plan in the already noted, plus two additional watersheds, Eld and Totten Inlets. They are included because sometimes the vicissitudes of opportunity evolve unevenly.

WATERSHED INVENTORY SUMMARY: Squaxin biologists have reviewed all known reports and plans published over the years related to recovery of biological health in South Sound and its upland watersheds. Much of the research and investigation has actually been conducted by the Tribe. Based on our collective knowledge and best professional judgment, the following barriers or impediments are priorities for immediate correction.

South Puget Sound-wide common functional barriers or impediments include:

- Climate change & ocean acidification.
- Diminished fisheries because of a lack of:
    - Funding for monitoring, assessment, protection, restoration, enhancement and compliance verification.
    - In-stream large woody debris.
    - Landowner support.
    - Riparian buffers leading to elevated summer stream temperature and low concentrations of dissolved oxygen (*among other impairments*).
    - Stream or river/wetland/floodplain interactions.
- Excess nutrient loading leading to low concentrations of dissolved oxygen and respiration-driven acidification particularly in Budd and Case Inlets.
- Natural flow regime disruption from increased storm water runoff and decreased summer low flows—fundamentally caused by increased impervious surfaces and decreased forest cover.
- Pathogens/harmful algal blooms closing shellfish beds to harvest.
- Salmonid smolt mortality.
- Shoreline armoring and estuary loss.
- Toxic constituents in Inner Budd Inlet and Shelton Harbor sediments.

South Sound-wide actions to partially address these impediments include:

- Adopt a "65-10-like" ordinance in Thurston County to maintain < 10% impervious surfaces and > 65% forest cover in three pilot basins.
- Adopt a moratorium on new exempt wells to partially address disruption of natural flow regimes.
- Eliminate Forest Practices Act 20-acre exemption to improve riparian buffers.
- Initiate toxics TMDL to address poor water and associated sediment quality.
    - Update state fish consumption rate as part of water quality standards rulemaking to increase human health protection.
- Monitor nutrients and pH to track ocean acidification trends.

Selected Marine Waters and Upland Watersheds

Budd Inlet and Upland Watersheds

Unique Characteristics & Impediments

- This watershed should be the largest producer of coho in deep South Sound, but it is not. Currently at least two of the three naturalized brood-years are on the verge of extinction.
- Shellfish harvest is not allowed because of toxic contamination and WWTP discharge in the harbor area.
- The lack of a functional Deschutes Estuary and other pocket estuaries is also a key factor diminishing fisheries.
- The Deschutes River is geologically young and 75% of the sediment transported is natural.
- Capital Lake is not large enough to absorb even the natural phosphorus load coming down the Deschutes River.
- Nitrogen loading from the Deschutes River is a key factor limiting dissolved oxygen and diminishing fisheries. East Olympia is one of several nutrient hot spots.
- Fine sediment in spawning gravels is the number one habitat impairment in the upper watershed.
- Warm stream temperatures, particularly in the middle watershed, are extremely stressful for salmonids.
- The Deschutes Watershed has the second fastest increase in the number of permit-exempt wells installed in the entire State of Washington.

Immediate Solutions

- Remove Capital Lake dam and restore the Deschutes Estuary to improve circulation, increase dissolved oxygen, and address nutrient and sediment loading.
- Restore four other pocket estuaries around Budd Inlet—Schneider, Garfield, Indian/Moxlie and Mission—to benefit out migrating fisheries.
- Reduce nutrient loading from the Deschutes River by acquiring/retiring a proposed development in East Olympia with 120 septic systems, and restoring extensive floodplain/tributary wetlands including a denitrification function.
- Restore wetland, riparian and floodplain functions at the outlet of Lake Lawrence to address summer stream temperatures in the warmest reach of the Deschutes River.

Hammersley Inlet, Oakland Bay and Upland Watersheds

Unique Characteristics & Impediments

- Hammersley Inlet and Oakland Bay host some of the most productive shellfish beds in the world, but harvest is frequently closed primarily by nonpoint source pollution.
- Oakland Bay is the terminal estuary of a terminal estuary (*South Sound*) of a terminal estuary (*Puget Sound*) resulting in very poor water exchange, an extreme sensitivity to

pollutant loading, and at high risk for developing a nutrient-driven dissolved oxygen deficit.

- Goldsborough Creek may be the only watershed in all of Puget Sound to increase coho smolt production in the last ten years. The increase occurred after removal of a dam in 2001 that blocked access to 25 miles of additional fish habitat.
- The lower-middle reaches of Goldsborough Creek are bisected by a railroad disconnecting wetlands and tributaries from the mainstem.
- Johns Creek cools as summer flow progresses downstream because of significant groundwater influx, and that cool water is the first to attract a unique stock of returning summer chum. However, it increasingly does not achieve statutory minimum stream flows in part because of the cumulative effect of an increasing number of permit-exempt wells.
- Cranberry, Johns and Mill Creeks are all listed as temperature impaired.

Immediate Solutions

- Develop a nitrogen budget for Oakland Bay to supplement the South Sound Dissolved Oxygen Study and evaluate whether a proposed 10 ppm nitrogen discharge year around from the Shelton WWTP is low enough to prevent a dissolved oxygen deficit and limit acidification.
- Fund a pollution identification and correction grant to address nonpoint sources of water pollution and protect shellfish harvest.
- Create saltwater marsh in Shelton Harbor to benefit the fresh-saltwater transition made by out migrating coho.
- Reconnect wetlands and tributaries with the mainstem at seven sites along the lower-middle reaches of Goldsborough Creek.
- Acquire and enhance the Johns Creek alluvial plain and estuary, and retire a water right to benefit shellfish, summer chum, coho and stream flows.
- Change the operation of Cranberry Creek's Lake Limerick dam discharge from a surface spillway to an existing underwater standpipe to withdraw and discharge cooler water from the bottom of the lake.

Skookum Inlet and Upland Watersheds

Unique Characteristics & Impediments

- Skookum Creek runs through reservation land, and hosts two chum runs almost as significant as Kennedy Creek's in Totten Inlet.
- The watershed has one of the lowest levels of impervious surfaces in South Puget Sound.
- The central portion of the watershed in the Kamilche Valley is an ancient lakebed comprised mainly of very fine sediments with little coarser material.
- The Kamilche Valley has been heavily degraded by agriculture and forestry activities. The mainstem was rerouted and has incised disconnecting critical portions of the historic floodplain from the creek.

- A railroad at the toe of the north slope has ~32 failed culverts disconnecting tributaries from the mainstem Skookum Creek. The disconnection has interrupted gravel transport starving the mainstem of coarser sediment appropriate for spawning.
- Skookum Creek is listed as temperature impaired and has an extremely flashy hydrologic regime with diminished flows.

Immediate Solutions

- Acquire Kamilche Valley floodplain, retire a water right, implement a complete geomorphic reconstruction of Skookum Creek, and replant the riparian zone to improve stream functions, limit fine sediment and cool water temperatures.
- Fix priority culverts under the Puget Sound and Pacific Railroad to provide both fish access upstream and gravel transport downstream.

Nisqually Reach & Carr Inlet

Unique Characteristics & Impediments

- The Chambers Creek WWTP is the largest source of nitrogen loading in South Sound potentially diminishing dissolved oxygen concentrations and contributing to respiration-driven acidification.
- The recent change in use of McNeil Island presents an opportunity to restore several pocket estuaries confounded by roads and other structures along a relatively undeveloped shoreline.

Immediate Solutions

- Fully denitrify Chambers Creek WWTP discharge as part of current upgrades.
- Restore full function to four pocket estuaries on the north and west sides of McNeil Island

Totten Inlet and Upland Watersheds

Unique Characteristics & Impediments

- Kennedy Creek at the end of Totten Inlet hosts the largest chum run in deep South Sound.
- Green Diamond, the primary landowner in the lower Kennedy Creek Basin, is working with Trust for Public Lands to identify key forestlands to conserve from development.

Immediate Solutions

- Advocate that Green Diamond prioritize conserving their lands in the Kennedy Creek basin to protect the chum fishery.

TRIBAL/PUBLIC INVOLVEMENT: the *SIT 2012-2014 South Puget Sound Watersheds Conservation Action Plan* was developed as an outcome of numerous public and Tribal processes, and has been adopted by Tribal Council. First and foremost, it represents a set of near term actions to

address Treaty Rights at Risk and the failure of federal and state governments to uphold their commitments.

All the technical documents in the Supporting References/Reports section have been through some sort of public vetting. For example, the EDT analysis and Anchor Report was presented for review and comment at several public meetings since its completion, including one held at the SIT casino in early 2005 and at the 2005 South Puget Sound Fisheries Enhancement Group annual meeting. Local government representatives, state representatives, fisheries managers and the interested public have all had opportunity to comment and ask questions.

The Oakland Bay Nearshore Assessment has been reviewed and adopted as a foundation document in the Mason County/City of Shelton shoreline master plan update. The TMDL's, Action Agenda, DO Study, PSNERP, etc. all have their own peer review processes that the Tribe has taken advantage of.

Finally, Natural Resources biologists have distilled all this information and prioritized it with the advice and approval of Tribal finfishers and shellfishers.

2012-14 ACQUISITION/CONSERVATION EASEMENT CAPITAL PLAN

Action	*Approimate. Cost*
Acquire Johns Creek estuary & alluvial plain (*Hammersley Inlet—Johns Creek*)	$4.0M
Acquire Kamilche Valley floodplain (*Skookum Inlet—Skookum Creek*)	$2.0M
Acquire East Olympia wetlands/floodplain (*Budd Inlet—Deschutes River*)	$3.0M
Place conservation easement on Green Diamond Kennedy Creek property (*Totten Inlet*)	$0.0M
TOTAL	$9.0M

Second Tier Priorities

Acquire additional Mud Bay shoreline in Eld Inlet	$1.5M
Acquire Chapman Cove shoreline in Oakland Bay	$1.5M
Acquire Skookum Creek estuary in Skookum Inlet	$0.5M
Acquire additional Budd-Henderson Inlets wildlife corridor properties	$0.8M
Place conservation easement around Johns Creek cold water tributary	$0.3M
Place conservation easement around Johns Lake	$0.5M
Acquire community forest in upper Deschutes, Nisqually & Chehalis Watersheds	*unknown*
ADDITIONAL	$5.1M

DEMAND AND NEED ANALYSIS

2012-14 Priority Marine Projects of Regional Significance

Waterbody	**Action**	**Environmental Outcome**	**Puget Sound Vital Signs Addressed**					**Supporting References/Reports**
			Healthy Human Populations	*Water Quality*	*Water Quantity*	*Protect & Restore Habitat*	*Species & Food Web*	
South Sound	Update fish consumption rate & initiate toxics TMDL	Cleaner discharges & sediment quality; safer fish to eat	Shellfish beds	Toxics			Salmonids	*DOE Oakland Bay Sediment Characterization; DOE Budd Inlet Sediment Investigation*
	ID cause of salmonid smolt mortality	ID fix for salmonid smolt mortality					Pacific herring; salmonids	*SIT Acoustic Tagging of Netpen Coho Salmon*
	Monitor nutrients/pH	ID nutrient loading & ocean acidification trends	Shellfish beds	Nutrients; DO; pH			Salmonids	*DOE South Puget Sound DO Study; PSRF Ocean Acidification Study*
	Implement McNeil Island restoration projects	Restored pocket estuaries	Shellfish beds	Salinity		Shoreline armoring; estuaries	Salmonids	*SIT McNeil Island Restoration Opportunities*
Budd Inlet	Remove Capitol Lake dam; restore Deschutes estuary	Improved water circulation		Nutrients; DO; salinity		Shoreline armoring; estuaries	Salmonids	*DOE Deschutes River, Capitol Lake & Budd Inlet...TMDL*

Waterbody	Action	Environmental Outcome	Puget Sound Vital Signs Addressed					Supporting References/Reports
Budd Inlet	Reduce nutrient loading from Deschutes River	Improved water quality in South Sound	On-site Sewage	Nutrients; DO		Floodplains estuaries	Salmonids	*DOE Deschutes River, Capital Lake & Budd InletTMDL; DOE South Puget Sound DO Study*
	Implement Budd Inlet early action projects	Restored pocket estuaries		Salinity		Shoreline armoring; estuaries	Salmonids	*PSNERP Candidate Restoration Site List; SIT Budd Inlet Landscape Analysis*
Hammersely Inlet	Create saltwater marsh in Shelton Harbor	Enhanced transition from fresh to salt water		Salinity		Estuaries	Salmonids	*SIT Oakland Bay/Hammersley Inlet Nearshore Habitat Assessment*
	Develop nitrogen budget	Determine loading capacity	On-site sewage; WWTP's; shellfish beds	Nutrients; DO; path; toxics			Salmonids	*DOE South Puget Sound DO Study*
	Fund PIC Program	Corrected nonpoint sources	Shellfish beds	Pathogens				*MC Oakland Bay Action Plan; DOE Oakland Bay, Hammersley Inlet FC Bacteria TMDL*
	Acquire & restore Johns Creek lower floodplain & estuary	Restored riparian zone & enhanced fisheries	Shellfish beds	Temp; DO; nutrients; LWD	Summer stream flow (retire water right)	Floodplains estuaries	Birds; salmonids	*PSNERP Candidate Restoration Site List*
Nisqually Reach	Denitrify Chambers WWTP	Improved water quality in South Sound		Nutrients; DO			Salmonids	*DOE South Puget Sound DO Study*

2012-14 Priority Upland Projects

Waterbody	**Action**	**Environmental Outcome**	**Puget Sound Vital Signs Addressed**					**Supporting References/ Reports**
			Healthy Human Populations	*Water Quality*	*Water Quantity*	*Protect & Restore Habitat*	*Species & Food Web*	
Regulation	Adopt "65-10-like" land use ordinance in Thurston County	Preserved in perpetuity > 65% forest cover and < 10% impervious surface in 3 pilot basins		Fine sediment; temp; DO; nutrients; pathogens; toxics	Summer stream flows	Land development & cover	Salmonids	*Citizens Alliance for Property Rights vs Sims; EPA TC Watershed Characterization: BAS to local policy & implementation*
	Adopt moratorium on new exempt wells	"No net loss" of stream flows		Temp; DO	Summer stream flows		Salmonids	*NWIFC Tribal Water Principles*
	Eliminate Forest Practices Act 20-acre exemption	Improved water quality		Temp; DO; fine sediments		Land development & cover	Salmonids	*NWIFC Forestry Action Paper*

Waterbody	Action	Environmental Outcome	Puget Sound Vital Signs Addressed					Supporting References/ Reports
Cranberry	Change Lake Limerick dam outflow	Moved outflow to cool lake bottom, not hot surface		Temp; DO			Salmonids	*DOE Cranberry, Johns & Mil Creeks Temp TMDL*
Johns	Achieve statutory minimum stream flows	Restored fisheries		Temp; DO	Summer stream flows		Salmonids	*SIT vs Washington State Department of Ecology & Mason County*
Goldsborough	Reconnect wetlands & tributaries isolated by Simpson Railroad	Enhanced fisheries		LWD		Flood-plains	Salmonids	*SPSSEG Salmonid Habitat Project Development in the Goldsborough Creek Basin*
Skookum	Acquire & restore Kamilche Valley property (riparian & in-stream)	Restored stream channel geo-morphology & enhanced fisheries		Fine sediment; temp; DO; pathogens; LWD	Summer stream flows (retire water right)	Flood-plains	Elk; salmonids	*SIT Skookum Action Plan*

Waterbody	Action	Environmental Outcome	Puget Sound Vital Signs Addressed					Supporting References/ Reports
	Fix culverts under Puget Sound & Pacific Railroad	Restored tributary connectivity & gravel transport		Fine sediment		Flood-plains	Salmonids	*SIT Skookum Action Plan*
Deschutes	Acquire & restore East Olympia property (riparian & in-stream)	Restored wetlands & fisheries	On-site sewage (prevent 120 new septics)	Temp; DO; nutrients pathogens LWD	Summer stream flows (retire water right)	Land dev. & cover; flood-plains	Birds; salmonids	*SIT Deschutes Conservation Plan*
	Restore Smith Ranch (riparian & in-stream)	Restored wetlands & fisheries		Temp; DO nutrients; path. & LWD	Summer stream flows (retire water right)	Land dev. & cover; flood-plains	Birds; salmonids	*ANCHOR Initial Acquisition & Restoration Assessment of the Smith Ranch*

SUPPORTING REFERENCES/REPORTS

ANCHOR Initial Acquisition & Restoration Assessment of the Smith Ranch
http://olympiawa.gov/city-utilities/drinking-water/~/media/Files/PublicWorks/Water-Resources/MitigationPlan_Apx_E.ashx

DOE Budd Inlet Sediment Investigation
http://www.ecy.wa.gov/programs/tcp/sites_brochure/budd_inlet/budd_inlet_hp.htm

DOE Cranberry, Johns & Mill Creeks Temp TMDL
http://www.ecy.wa.gov/biblio/0503107.html

DOE Deschutes River, Capital Lake & Budd Inlet...TMDL
http://www.ecy.wa.gov/programs/wq/tmdl/deschutes/index.html

DOE Oakland Bay Sediment Characterization
http://www.ecy.wa.gov/programs/tcp/sites_brochure/oaklandBay/oaklandBay_hp.htm#Sediment_Investigation_Report:

DOE Oakland Bay, Hammersley Inlet & Selected Tributaries Fecal Coliform Bacteria TMDL
http://www.ecy.wa.gov/biblio/1110039.html

DOE South Puget Sound DO Study
http://www.ecy.wa.gov/puget_sound/dissolved_oxygen_study.html

EPA Thurston County Watershed Characterization: Best Available Science to local policy & implementation
http://www.epa.gov/pugetsound/funding/index.html#watershed

MASON COUNTY Oakland Bay Action Plan
http://www.co.mason.wa.us/forms/Env_Health/oakland_bay_plan.pdf

MOBRAND EDT Analysis of Habitat Potential and Restoration Options: coho in South Puget Sound streams
http://prismnetattach.rco.wa.gov/prod/Project/11/11-1543/120971.PDF

NWIFC Forestry Action Paper

NWIFC Treaty Rights at Risk
http://nwifc.org/w/wp-content/uploads/downloads/2011/08/whitepaper628finalpdf.pdf

NWIFC Tribal Water Principles
http://nwifc.org/2003/01/united-tribes-distribute-water-principles/

PSNERP Candidate Restoration Site List
http://www.pugetsoundnearshore.org/graphics/psnerp_candidate_restoration_sites_map.pdf

PSP Puget Sound Action Agenda
http://www.psp.wa.gov/action_agenda_2011_update_home.php

PSP Vital Signs
http://www.psp.wa.gov/vitalsigns/index.php

PSRF Ocean Acidification Study
http://www.restorationfund.org/projects/ocean

SIT Acoustic Tagging of Netpen Coho Salmon
http://nwifc.org/2007/09/squaxin-tribe-finds-high-rate-of-coho-mortality/

SIT Budd Inlet Landscape Analysis
http://www.squaxin-nr.org/2010/10/squaxin-island-tribe-rolls-out-new-landscape-analysis-of-budd-inlet/

SIT Deschutes Conservation Plan

SIT McNeil Island Restoration Opportunities
http://wdfw.wa.gov/publications/00598/wdfw00598.pdf

SIT Oakland Bay/Hammersley Inlet Nearshore Habitat Assessment

SIT Skookum Action Plan

SPSSEG Salmonid Habitat Project Development in the Goldsborough Creek Basin

STATE COURT: Citizens Alliance for Property Rights vs Sims
http://www.wasupremecourtblog.com/2009/03/articles/petitions-for-review/citizens-alliance-for-property-rights-v-sims-no-821062

STATE COURT: SIT vs Washington State Department of Ecology & Mason County
http://www.ecy.wa.gov/programs/wr/wrac/images/pdf/09202011_orderonpetitionforjudicialreview.pdf

APPENDIX—*List of Squaxin Projects*
*(*priorities highlighted*)*

South Sound Marine Waters

- Adopt a fish consumption rate protective of Tribal health
  - Codify fish tissue testing as legitimate
  - Initiate toxics TMDL
- Adopt moratorium on new shoreline armoring & docks
- Research agenda
  - ID cause of salmonid smolt mortality
    - Continue to monitor spawner & smolt trends
    - ID local sources of toxic contamination in fish tissue
    - ID trophic shifts in plankton, jellyfish & forage fish populations
  - Monitor nutrients & pH/ocean acidification

- Budd Inlet
  - Cap or dredge dioxin hot spots
  - Implement early action projects around inner Budd Inlet
    - Schneider delta donation/restoration
    - Garfield delta restoration
    - Moxlie delta restoration
    - Mission estuary restoration
    - Priest Point Park bulkhead removal
    - Ellis Creek culvert replacements
  - Reduce nutrient loading from Deschutes River
  - Remove Burfoot Park bulkhead
  - Remove Capital Lake dam & restore Deschutes estuary
- Carr Inlet
  - Conserve Burley Lagoon
  - Remove Filucy Bay bulkhead
  - Remove Mayo Cove bulkhead
  - Replace Glen Cove culvert
  - Replace Little Minter Creek culvert
  - Remove shoreline armoring & restore pocket estuaries around McNeil Island
    - Luhr Creek
    - Bradley Creek
    - Floyd Cove
    - Milewa Creek
- Case Inlet
  - Conserve Dutcher Cove
  - Conserve north Whitman Cove estuary
  - Conserve Rocky Bay estuary
  - Control or treat pathogens in Allyn stormwater discharges

- Demo Filterra/Bacterra stormwater treatment system
- Match DFW bulkhead removal project
- Reconnect Whitman Cove
- Remove McMicken bulkhead

- Eld Inlet
  - Achieve WQS for FC at mouth of McLane Creek
  - Acquire Galvin property
  - Remove TESC bulkhead
  - Remove Young's Cove tidegate & boat ramp
  - Replace east fork McLane Creek culvert
  - Transfer Munro property & tidelands
- Hammersley Inlet
  - Conserve submarine groundwater discharge
  - Denitrify Shelton WWTP discharge
  - Develop nitrogen budget for Oakland Bay—is WWTP discharge of 10 mg/L year around low enough?
  - Fund PIC program

  - Chapman Cove
    - Achieve 14/43 FC standard at the mouths of Uncle Johns & Campbell Creeks
    - Acquire Chapman Cove property
    - Fence all livestock out of estuary
    - Implement nutrient management plans on all waterfront ag lands
    - Replace Uncle Johns Creek blocking culverts
  - Shelton Harbor
    - Achieve WQS for FC at mouth of Shelton Creek
    - Cap dioxin hot spots
    - Conserve Eagle Point
    - Goldsborough Creek mouth
      - Create saltwater marsh
      - Eliminate tidal streambed degradation
    - Remove creosote pilings
  - Upper Oakland Bay
    - Achieve 14/43 FC standard at mouths of Cranberry, Deer & Malaney Creeks
    - Acquire Johns Creek estuary and alluvial plain
    - Eliminate TSS at mouths of Cranberry, Deer & Malaney Creeks
    - ID source & fate of pathogens found on inter-tidal sediment during summer critical period
    - PIC FC & TSS in Hwy 3 stormwater discharges
      - Paisley
      - Oakland Bay Farm

        - Willey
    - Restore riparian habitat along Deer & Cranberry Creeks on Twin River Ranch
    - Source-track shoreline discharges > 14/43 FC standard
- Henderson Inlet
    - Conserve WSU property
    - Eliminate artificial seal haulouts
    - Remove creosote pilings
- Little Skookum Inlet
    - Achieve WQS for FC at mouth of Skookum Creek
    - Acquire estuary property & place in DNR NAP
    - Eliminate livestock in estuary
    - Remove estuary dike
    - Retire estuary water right
    - Source-track shoreline discharges > WQS
- Nisqually Reach
    - Conserve & reconnect feeder bluffs along WRIA 12 shoreline
    - Conserve north Anderson Island pocket estuary
    - Conserve northwest Ketron Island estuary
    - Denitrify Chambers Creek WWTP discharge[1]
    - Remove Dogfish Bight tidegate
    - Remove Fox Island Bridge derelict culverts
    - Remove Oro Bay earthen dam
    - Restore Chambers Bay
- Squaxin Island Vicinity
    - Certify beaches on southwest side of island for shellfish harvest
    - Identify dioxin hot spots & potential sources
    - Monitor dissolved oxygen at net pens
    - Replace septic system & remove bulkheads/dry dock at Collier property
- Totten Inlet
    - Achieve WQS for FC at mouth of Burns/Pierre, Kennedy & Schneider Creeks
    - Adopt moratorium on any further shoreline development (except aquaculture)
    - Remove dam at Burns Cove

<u>Upland Basins</u>

- Achieve statutory minimum stream flows
- Adopt "65-10 ordinance" in Thurston County
- Adopt moratorium on new exempt wells
- Eliminate Forest Practices Act 20-acre exemption
- Increase Forest Practices Act protection of forested wetlands
- Infiltrate stormwater to re-establish some semblance of natural flow regimes

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[1] Secondary priorities include Fort Lewis/Solo Point WWTP & Chambers, McAllister & Nisqually outflows

- Burley
- Campbell
- Coulter
    - Evaluate relationship between forest practices & streamflow regime
- Cranberry
    - Add LWD to canyon reach
    - Switch Lake Limerick summer outfall from top (overflow) to bottom (standpipe)
- Deer
    - PIC FC sources between Hwy 3 & mouth—both septic & livestock
- Deschutes
    - Acquire East Olympia wetlands/tributary/floodplain
    - Add LWD to Deschutes on Weyerhaeuser property, & along Turner & Silver Springs Ranch reaches
    - Conserve thermal refugia at Silver & Turner Springs
    - Develop community forest in Deschutes, Nisqually & Chehalis Watersheds
    - Develop strategy to restore Spurgeon Creek riparian corridor (start with SPSSEG Fox Hill meander reconstruction project)
    - Further reduce fine sediment entering the upper watershed from anthropogenic sources like forest roads & ATV/horse use of the river bed
    - Huckleberry Creek
        - Evaluate recovery of coho spawning
        - Re-engineer mouth in Trails End development to restore ecological function & alleviate flooding
    - ID additional reaches & tributaries used by rearing coho & prioritize for restoration
    - Pilot water availability mapping & enforcement
    - Recharge reclaimed water per LOTT Alliance long range plan
    - Restore the Smith Ranch (outlet of Lake Lawrence) per the October 2010 Anchor assessment & Deschutes TMDL technical report
    - Restore wetlands, off-channel habitat & channel morphology/decrease nutrient loading & fine sediment input in the upper portion of the lower river around East Olympia
    - Retire East Olympia water right
    - Set instream flow minimums for the summer months
- Goldsborough
    - Add LWD to lower canyon reach
    - Control invasive plants in wetland reach—start by restoring Rose property wetlands to a more natural condition
    - Develop numeric groundwater model: 1) to direct City of Shelton to new, low impact water sources; 2) to quantify groundwater contribution from Winter Creek sub-basin
    - Expand acquisition or conservation easements in wetland reach
        - Granquist

        - Green Diamond
    - Locate & control knotweed
    - Provide fish passage & habitat improvements at five lower canyon locations bisected by railway
        - Likes
        - Midway
        - Overflow channel
        - Powerline fill
        - Wetlands
    - Track coho use of Shelton Harbor before & after restoration
- Gull Harbor—Woodard Bay Wildlife Corridor
    - Acquire additional wildlife corridor parcels
    - Expand Woodard Bay NRCA boundary
    - Remove earthen dam on Bayfield Creek
    - Replace Boston Harbor Road culvert on Bayfield Creek
- Johns
    - Add LWD to canyon reach below railway
    - Develop numeric groundwater model of the entire basin with special emphasis on the connection between Rainbow Lake & cold water tributary
    - Develop source of reclaimed water for groundwater infiltration
    - Disable hatchery diversion
    - ID natural background condition of wetlands for water temperature
    - Place conservation easement on forest lands adjacent to cold water tributary
    - Place conservation easement on forest lands around Johns Lake
    - Prevent further development in riparian zone of wetland reach
    - Remove hatchery weirs
    - Replant riparian buffer under powerlines
    - Restore some semblance of natural estuary—to extent possible, remove intertidal & surpatidal dikes to restore tidal inundation & nearshore processes
    - Retire Bayshore Golf Course water right
    - Transfer Bayshore Sand & Gravel water right from surface to ground
- Kennedy
    - PIC FC sources—both septic & livestock
    - Place conservation easement on all Green Diamond property
    - Review success of HCP/TMDL implementation & adaptive management
- Malaney
- McLane
    - ID natural flow conditions for Beatty Creek & changes over time
    - Locate & control knotweed
    - PIC FC sources—both septic & livestock
- Mill
    - ID impact of invasive fish on salmonid populations in Lake Isabella
    - ID strategy to cool water temperatures below Lake Isabella

- Minter
- Percival
- Perry
- Purdy
- Rocky
- Schneider
    - PIC FC sources—both septic & livestock
- Sherwood
    - ID impact of invasive fish in Mason Lake on salmonids migrating in to & out of Schumacher Creek
- Skookum
    - Acquire Kamichle Valley property & convert to tree farm
    - Develop numeric groundwater model to direct Squaxin Island Tribe to new, low impact water sources
    - Implement total geomorphic reconfiguration of Skookum Creek in lower Kamilche Valley
    - Locate & control knotweed
    - Plumb Taylor process water into Squaxin reclaimed water system
    - Provide gravel & fish passage through all ~32 culverts under the railway
    - Restore natural channel at basalt tunnel on northern tributary (or at least clean the trash rack)
- Snodgrass
- Squaxin Island
- Uncle Johns
    - PIC FC sources—both septic & livestock
- Woodard
- Woodland
    - Prioritize City of Lacey restoration funds for recently acquired riparian habitat
    - Recharge reclaimed water to benefit upper basin