## FY10 PSP/EPA Tribal Implementation Project Titles

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FY10 PSP/EPA Tribal Implementation Project Descriptions

**Lummi Nation**
Lummi Nation, in developing a strategy to address sediment impacts in the South Fork Nooksack River, will: (1) assess the physical conditions of active, abandoned, and orphaned forest roads by collaborating with private and public forest owners; and (2) update a recent master’s thesis on measuring the amount of sediment input by source, focusing on updating landslide and streambank erosion data.

**Nooksack Indian Tribe**
Nooksack Indian Tribe proposes to construct historic-scale log jams in four reaches in the Nooksack River Forks, including downstream of Hutchinson and Black Slough Reaches and Farmhouse and Wildcat Reaches. Log jams will be designed to address factors most limiting Nooksack early Chinook and other salmonid populations in each reach and will ultimately lead to restored habitat conditions and habitat-forming processes in project reaches, with associated improvements in abundance and productivity of Nooksack early Chinook.

**Samish Indian Nation**
Samish Indian Nation will work with Washington Department of Natural Resources to collect baseline environmental data of prior to, during, and post restoration activities related to the removal of a tidal dike to restore salt marsh, mudflat and tidally-influenced stream habitat at Cypress Island. This data will be a critical component to overall restoration goals at the Cypress Island site, a culturally and historically significant area to the Samish Indian Nation.

**Skagit River System Cooperative**
The Skagit River System Cooperative will quantify and contrast the geomorphological, hydrological, and ecological consequences of various approaches to tidal marsh restoration for 12 historical and 8 current sites in the Skagit and Snohomish deltas, using reference marshes in both deltas as controls. This proposal, analyzing both dike breaching and dike removal sites, is necessary in order to facilitate better restoration planning that accounts for the degree to which differing restoration approaches recover ecological function.

**Swinomish Indian Tribe**
The Swinomish Indian Tribe will engage in two projects: (1) a public education effort that will be directed at decision makers and stakeholders to improve the standards and implementation of best management practices, and to increase the level of regulatory certainty that instream resources will be protected, consistent with the Skagit Chinook
Recovery Plan; and (2) the Tribal Water Quality Project, an ongoing project to gather water quality data across the Salish Sea during the Tribal Canoe Journey, in order to map out spatial patterns at multiple scales to detect large-scale oceanographic/climate and site-scale land-use influences.

**Upper Skagit Indian Tribe**

The Upper Skagit Indian Tribe will determine the seasonal and spatial distribution of yearling (stream-type) life history salmonids in the Skagit River, WA, with an emphasis on Chinook salmon and steelhead trout. The results of this investigation are intended to fill data gaps necessary for effective recovery planning of Chinook salmon and steelhead in the Skagit River basin and inform similar efforts in the Puget Sound basin.

**Sauk-Suiattle Indian Tribe**

The Sauk-Suiattle Indian Tribe will engage in two projects: (1) reinforcement of a multiagency partnership to eradicate knotweed from the Skagit River watershed and its major tributaries, focusing its efforts on the Sauk and Suiattle rivers, both of which feature key spawning and rearing habitat for Puget Sound salmonids; and (2) engaging in a partnership with the U.S. Geological Survey (USGS) to determine how the timing, quantity, and sources of sediment in the Sauk and Suiattle rivers are impacting sensitive fish runs.

**Stillaguamish Tribe of Indians**

The Stillaguamish Tribe will engage in two projects to reduce the impacts of stormwater to aquatic ecosystems: (1) monitoring of stormwater outfalls in the Lower Stillaguamish River for the presence of a wide range of pollutants, leading toward the implementation of improved best management practices; and (2) employment of mycoremediation techniques to test if polluted land-based runoff can be treated prior to its entering conveyance systems.

**Tulalip Tribes**

The Tulalip Tribes will engage in two projects: (1) identifying protection priorities based on benefits to Chinook salmon recovery by utilizing Watershed Characterization results and current subbasin data, including known impairments, zoning information, and resource management plans and ecosystem service information. This project will serve as a pilot for the larger EPA Watershed Grant (Snohomish Watershed Characterization and Protection) and will provide a model for the larger project as well opportunities for early implementation actions; and (2) integrating water, carbon, and nitrogen budgets for the Snohomish River watershed to determine how changing carbon management of the upland ecosystems impacts water and nitrogen delivery to the Snohomish River and Puget Sound.
**Snoqualmie Indian Tribe**
The Snoqualmie Tribe will partner with King County in the design and setback of the McElhoe-Pearson Levee and revetment in order to restore floodplain habitat by reconnecting the Snoqualmie River with its floodplain. Project tasks include: (1) developing the McElhoe-Pearson Levee project design; (2) conducting a baseline monitoring data set of water quality and habitat health; and (3) engaging in partnering and outreach with the local landowners and community.

**Suquamish Tribe**
The Suquamish Tribe will focus on how to continue long term sustainable management by analyzing how waters with low dissolved oxygen (DO) and low pH threaten many aquatic species including Dungeness crab. Project tasks include: (1) in vitro assessment of low pH and dissolved oxygen effects on crab larvae; (2) coordination of regional water quality collection efforts; (3) supporting the volunteer Megalops Collection Network; and (4) building Suquamish youth and elder group capacity to develop outreach and education materials.

**Muckleshoot Indian Tribe**
The Muckleshoot Indian Tribe will examine fine sediment loading and intra-gravel quality in Middle Green River salmon spawning habitat areas to assess potential effects on salmon life stage survival and production. Project tasks include: (1) the collection and analysis of gravel samples; (2) a geology/geomorphology characterization of the landslide activity and future potential fine sediment supply to the river; (3) developing a plan to estimate fine sediment loading rates from the landslide, reservoir, and upriver sources; and (4) comparing intra-gravel quality within the sampled spawning habitat areas.

**Puyallup Tribe of Indians**
The Puyallup Tribe of Indians will conduct a sediment oxygen demand and stormwater monitoring investigation on Clarks Creek, an ESA designated critical habitat for salmon spawning and rearing, in order to complete and implement a Total Maximum Daily Load (TMDL) for dissolved oxygen. This TMDL project is the first in Puget Sound to use storm flow volumes as surrogate waste load allocations and is considered a pilot project that can be applied to other impaired, urban streams in the Puget Sound to improve stormwater management.
**Nisqually Indian Tribe**
Nisqually Indian Tribe will conduct two projects: (1) partnering with the Town of Eatonville to update its plan for managing stormwater in Eatonville, focusing on identifying ways to incorporate retrofits and low impact development to infiltrate and treat a greater portion of stormwater; and (2) extending Nisqually Sustainable, a project that provides an economic incentive for watershed businesses to conserve water, reduce wastewater, reduce pollution, and manage stormwater sustainably.

**Squaxin Island Tribe**
The Squaxin Island Tribe seeks to contribute to the recovery of lost Coho productivity in the Deschutes Watershed by (1) identifying high priority habitat restoration actions, based on existing information and identification of heavily used reaches by Coho fry; and (2) developing the technical basis for DOE to set summer minimum flows in WAC 173-513 and enable the use high level indicators to evaluate summer streamflow achievement.

**Skokomish Tribal Nation**
The Skokomish Tribal Nation will conduct research and monitoring efforts focused on assessing the effectiveness of the Skokomish Estuary Restoration Project (SERP). Project tasks include: (1) monitoring of relative abundance, distribution, residence time, feeding behavior, and species diversity of salmonids and other fish species; (2) monitoring of vegetation colonization and succession; (3) monitoring of sediment transport and estuarine mixing; and (4) monitoring of insect community response.

**Port Gamble S’Klallam Tribe**
The Port Gamble S’Klallam Tribe will document and analyze size, condition, growth factor, predation, and other constraining environmental mechanisms that affect the early marine life history of juvenile salmon and forage fish in outer Hood Canal. This project will help describe nearshore nodal habitats, track juvenile salmonid out migration timing, and characterize juvenile salmonid condition factors.

**Point No Point Treaty Council**
The Point No Point Treaty Council seeks to develop an efficient procedure for surveying and analyzing intertidal substrate samples for the presence of forage fish spawn, primarily surf smelt spawn, and secondarily Pacific sand lance spawn. This project will also develop a quantifiable measure of the annual spawn deposition around Indian Island that can be compared among several years to indirectly assess trends in the target forage fish spawning population abundance.
**Jamestown S'Klallam Tribe**

The Jamestown S'Klallam Tribe will conduct two projects: (1) collating, analyzing, and distributing Jimmycomelately Creek and Estuary Restoration project results, in order to better understand the project elements that succeeded and that failed; and (2) determining the magnitude, extent, contributing sources, and possible impacts of elevated nutrients in Sequim and Dungeness Bays.

**Lower Elwha Klallam Tribe**

The Lower Elwha Klallam Tribe will use radio telemetry to track the movements of adult steelhead and adult salmonids in the Elwha River Basin during and immediately following the removal of the lower Elwha Dam and the upper Glines Canyon Dam. This study will inform basic fish behavior in response to the largest scale dam removals on the west coast, providing information to any future restoration efforts involving dam removal and recolonization of previously (or long since) unseeded areas.

**Makah Tribe**

The Makah Tribe will conduct four projects: (1) providing a consistent and vocal presence on freshwater/terrestrial issues for the Western Strait of Juan de Fuca; (2) re-establishing long-term streamflow monitoring stations on the Clallam and Sekiu Rivers; (3) establishing a real-time meteorological station in the Hoko river drainage for increased accuracy of Western Strait of Juan de Fuca climatic patterns; and (4) restoring the degraded Pysht river floodplain habitat through the removal of noxious weeds and derelict structures.