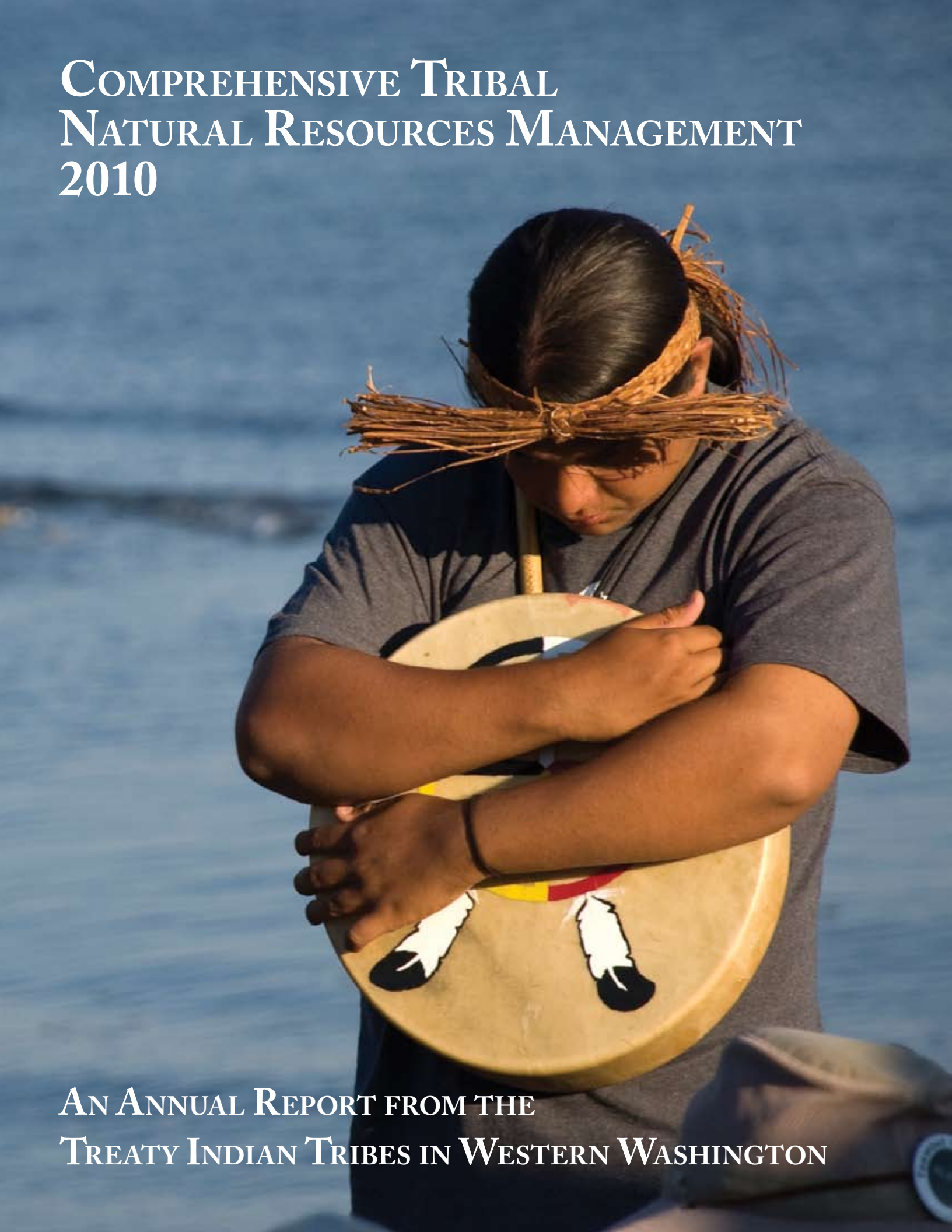
# Comprehensive Tribal Natural Resources Management 2010



## An Annual Report from the Treaty Indian Tribes in Western Washington


Map: *Ron McFarlane.* On the cover: Greg Lehman, Squaxin Island Tribe, pauses from drumming during the 2009 Tribal Canoe Journey: Paddle to Suquamish. Photo: *Tony Meyer*

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Jon Preston

A male and female coho hover over a redd in Taft Creek, a tributary to the Hoh River.

# Introduction

*We are the treaty Indian tribes in western Washington. We are salmon people. We have lived here for thousands of years. We depend on the natural resources of the Pacific Northwest to sustain our way of life.*

*For more than 150 years, we have fought countless battles to protect the salmon and the fishing rights that we reserved in treaties with the United States. We are natural resources co-managers with the state of Washington and leaders in salmon recovery. For us, the fight to save the salmon continues where we live – every day in every watershed.*

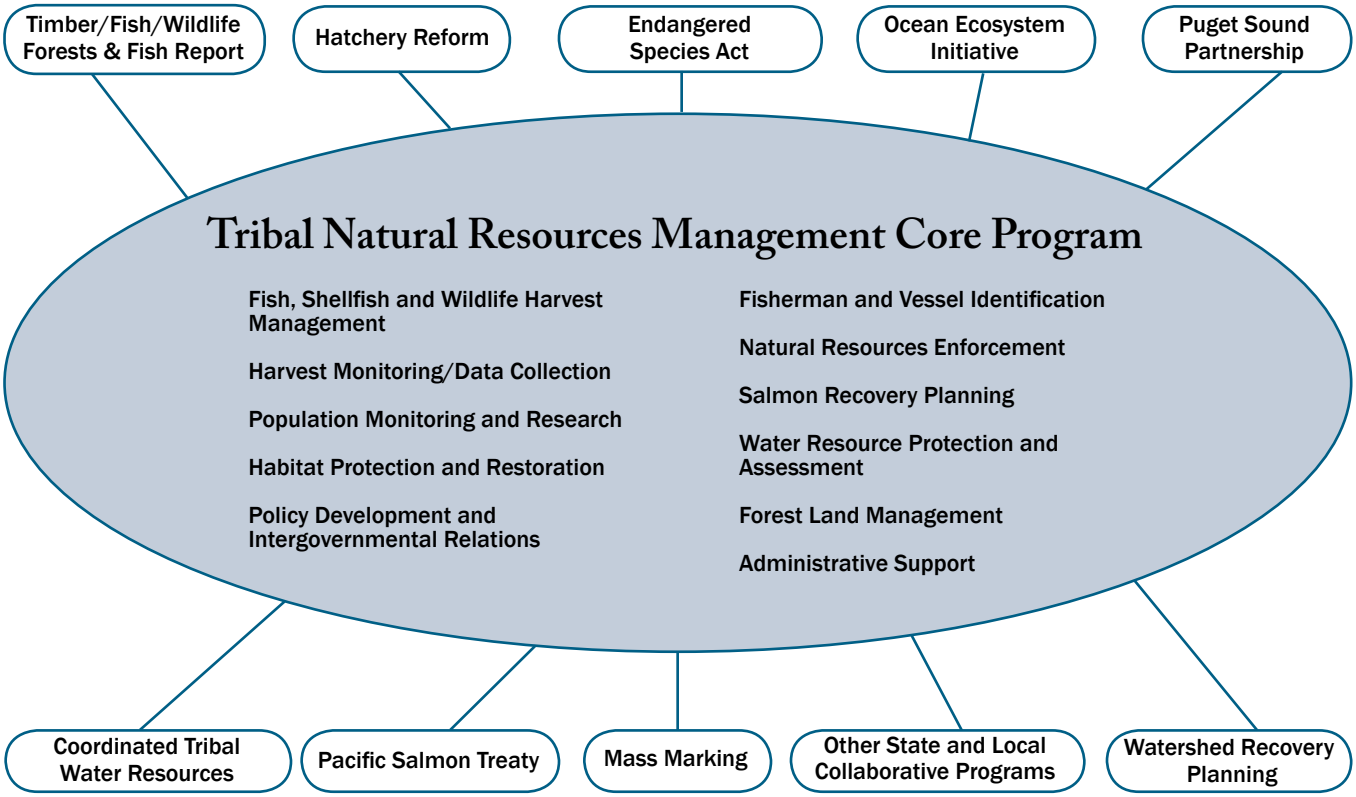
*Salmon in western Washington continue to disappear despite massive harvest reductions and an overhaul of hatchery practices. Salmon are at a tipping point because neither hatcheries nor harvest restrictions can compensate for the ongoing destruction of salmon spawning and rearing habitat.*

*We have one goal and one standard for salmon recovery: Return all wild salmon populations to sustainable levels that can again support harvest. We are not interested in preserving salmon runs as museum pieces.*

*Western Washington's ecosystem is under constant attack by threats such as population growth, water withdrawals and stormwater runoff. We know that by working together, these challenges can be met. We believe in cooperation and seek consensus-based solutions. We are guided by the belief that we must act in the best interests of generations to come.*

*Because of our treaty rights, and because all natural resources are connected, the treaty Indian tribes in western Washington are engaged in every aspect of natural resources management. This report outlines tribal natural resources management activities assisted by the Northwest Indian Fisheries Commission for Fiscal Year 2009. More information is available at* nwifc.org, *including links to Web sites of member tribes.*

*– Billy Frank Jr., NWIFC chairman*



Debbie Preston

Billy Frank Jr., chairman of the NWIFC, addresses tribal leaders meeting with Assistant Secretary-Indian Affairs Larry EchoHawk (right) in July.

# Year in Review

A major concern in 2009 was the state government's refusal to honor its responsibility to protect salmon habitat and tribal treaty-reserved fishing rights by fixing fish-blocking culverts under state-owned roads.

The treaty tribes in western Washington and the federal government filed suit against the state on Feb. 12, 2001, over hundreds of state-owned fish-blocking culverts. The state acknowledges that fish-blocking culverts are one of the most recurring and correctable obstacles to healthy salmon populations in Washington. More than 1,832 culverts owned by the state block more than 1,000 miles of salmon streams and access to many acres of spawning and rearing habitat.

On Aug. 23, 2007, the federal district court ruled that state culverts that block fish and diminish salmon runs violate Indian treaty fishing rights. The court ordered the tribes and state to develop a prioritized repair schedule, but those efforts were unsuccessful and the case went to trial in October.

Tribes pointed out that most of the failing culverts are situated on small streams and have small repair price tags.

The state claims it would take more than 100 years to fix all of the failing culverts given its current rate of repair. Tribes argue that increasing the number of culverts replaced each year by a handful would shorten that time frame considerably.

A ruling in the case is expected early in 2010.

At the national level, the tribes saw significant recognition of their rights and the federal government's trust responsibility with the election of President Barack Obama. Work is well under way on the tribes' recommendation to develop an Executive Order reaffirming and strengthening the Obama Administration's government-to-government relationship with Indian tribes.

Tribes were highly encouraged by the Obama Administration's appointment of officials who understand and respect treaty hunting, fishing, and gathering rights, tribal sovereignty and the federal trust responsibility. Tribes were pleased especially with the appointment of Larry EchoHawk as the assistant secretary for Indian Affairs. A special cabinet-level policy position in the White House also has been established to coordinate Indian affairs across all agencies of the federal government.

The tribal and state co-managers spent much of 2009 finalizing development of a new harvest management plan for Puget Sound chinook. Puget Sound chinook were listed in 1999 as "threatened" under the federal Endangered Species Act. The current harvest management plan, part of the overall recovery plan for the species, covered fisheries from 2004 to 2009.

The plan guides fisheries in western Washington under the co-managers' jurisdiction, and also considers the total harvest impacts of all fisheries, including those in Alaska and British Columbia, to assure that conservation objectives for Puget Sound chinook are achieved. The intention of the plan is to enable harvest of strong, productive stocks of chinook and other salmon species, and to minimize harvest of weak or critically depressed chinook stocks. The plan has been submitted to the National Oceanic and Atmospheric Administration's fisheries department for review.

Organizationally, commissioners conducted a facilitated strategic planning exercise to articulate their long-term vision, mission and goals for the NWIFC, and to lay out intermediate steps for the next three to five years. The plan increases emphasis on the need to protect and restore freshwater, marine and terrestrial habitats for the fish, wildlife and plant communities that are central to the tribes' cultures and exercise of their treaty-reserved rights.

Commissioners plan to move more aggressively to:

- Protect and restore essential habitats.
- Insist on improved and more cooperative management efforts.
- Forge partnerships by promoting collaboration wherever possible.
- Take whatever actions are necessary to reverse the declines and achieve the restoration of critical natural resources and their habitats.

# Tribal Salmon Management

Integration of harvest, hatcheries and habitat (the three H's) at the watershed level is the key to salmon recovery. Recovery efforts must be coordinated and based on sound science. As co-managers, treaty tribes have worked with the state for decades to consider the needs of both people and fish in refining fishery and hatchery practices to ensure that they contribute to salmon recovery. To make the most of these efforts, a similar commitment to habitat restoration and recovery is absolutely essential if we are to succeed in saving the salmon.

Kari Neumeyer

A Skagit River chinook cools on ice during the Upper Skagit Tribe's spring fishery.

## Salmon Harvest Management

Conservation comes first. More than 30 years ago, state and tribal salmon co-managers began sharply reducing harvest in response to declining wild salmon runs. Today's harvest levels are only 80-90 percent of those in 1985.

Under *U.S. v. Washington* (the Boldt decision), harvest can be shared only after sufficient fish are available to sustain the resource. Harvest management must be comprehensive and coordinated to limit mortality of weak wild stocks throughout their migratory range. While ensuring conservation, harvest management enables appropriate harvest of healthy stocks.

Harvest management must be based on the best available science and include monitoring and reporting systems to evaluate the status of stocks and impacts of fisheries, and inform future decisions.

Treaty Indian tribes and the Washington State Department of Fish and Wildlife co-manage salmon fisheries in Puget Sound, the Strait of Juan de Fuca and nearshore coastal waters. Tribal and state managers work cooperatively through the Pacific Fishery Management Council (PFMC) and the North of Falcon process to develop fishing seasons that protect weak salmon stocks. Tribal and state co-managers also work with Canadian and Alaskan fisheries managers through the U.S./Canada Pacific Salmon Treaty (PST).

The PFMC is a public forum established by the federal government that develops a comprehensive ocean fisheries plan. While the PFMC is planning coastwide ocean fisheries, treaty tribes and the states of Oregon and Washington are outlining inshore and coastal fisheries. This North of Falcon process is named for the geographic region it covers: north of Cape Falcon, Ore., to the Canadian border.

The PST was created in 1985 to coordinate fisheries between tribes, state governments, and the U.S. and Canadian governments. The Pacific Salmon Commission implements the treaty and establishes fishery regimes, assesses each country's performance and compliance with the treaty, and is a forum for fisheries issues. The treaty was updated in 1999 and 2008.

All proposed fisheries must comply with requirements of the federal Endangered Species Act (ESA) to ensure protection of listed stocks. In western Washington, Puget Sound chinook and steelhead, Hood Canal summer chum and Lake Ozette sockeye are listed as "threatened" under the ESA.

The Treaty Indian Fishery Catch Management Program is a key part of tribal and harvest management. Managed by the Northwest Indian Fisheries Commission, the program provides accurate, same-day catch statistics for treaty Indian fisheries in the *U.S. v. Washington* case area. The program enables tribal harvest levels to be monitored closely and in-season adjustments to be made.

## *Good planning leads to harvest on Skagit River*

For the first time in 16 years, recreational fishermen were able to fish for Skagit River summer and fall chinook in 2009, thanks to a plan developed by tribal and state co-managers.

"The tribes are committed to working together with non-Indian fishermen for the benefit of the salmon resource," said Lorraine Loomis, Swinomish fisheries manager and the tribal North of Falcon coordinator. "This harvest opportunity on the Skagit River is the outcome of strong salmon management allowing us to share the resource."

During the recreational fishery this summer, tribal and sport fishermen divided the week equally, with each fishing for three-and-a-half days.

"This fishing package gives everyone a chance to fish," said Scott Schuyler, natural resources director for the Upper Skagit Tribe.

The Skagit River is the largest producer of wild chinook in the region. More than 23,000 wild summer and fall chinook were expected to return to the Skagit. The next largest runs of chinook to any Puget Sound river were fewer than 10,000 fish. Recreational fishing on the summer/fall run had been closed since 1993.

Sport fishermen share the tribes' interest in sustaining harvestable numbers of fish, said Larry Carpenter of Master Marine in Mount Vernon. Carpenter represented anglers during the salmon allocation process.

"We've got to continue the run," Carpenter said. "I grew up fishing the Skagit. Where else can you go along the I-5 corridor to catch a prize wild king salmon?"

A key factor to lasting salmon recovery is habitat restoration, Loomis said. "The largest reason for the decline of salmon is the loss and degradation of habitat," she said. "The only way to lasting salmon recovery is to repair that damage."

Restoration projects by the Upper Skagit, Swinomish and Sauk-Suiattle tribes so far have improved hundreds of acres of chinook rearing habitat in freshwater banks, backwaters, estuary channels and pocket estuaries.

# Salmon Hatchery Management

More than 100 salmon enhancement facilities are operated in western Washington by treaty tribes, the state Department of Fish and Wildlife and U.S. Fish and Wildlife Service. It is the largest salmon hatchery system in the world. About 150 million salmon and steelhead are released annually from western Washington hatcheries; about 35 million of those by the tribes.

While tribal hatcheries have been producing fish for nearly 40 years, federal funding has not kept pace, threatening not only the ability of the tribes to implement essential hatchery reform projects, but also the tribes' basic ability to produce hatchery salmon for harvest.

Hatcheries help meet treaty tribal harvest obligations when wild salmon stocks cannot sustain harvest. Hatchery-produced salmon relieve pressure on commingled wild stocks.

Tribal hatcheries also provide additional fish for harvest by non-Indian fishermen, and help build natural runs that are culturally and spiritually important to the tribes. Some hatcheries support wild runs through broodstock programs in which native fish are captured and spawned, and their progeny are released to help bolster naturally spawning salmon runs.

Since 2002 the tribal and state co-managers have been implementing hatchery reform efforts based on recommendations from an independent science panel. Some of the recommendations included making capital improvements to tribal hatchery facilities.

The tribes of the Northwest Indian Fisheries Commission created the Tribal Fish Health Program in 1988 to meet the needs of their enhancement programs. Tribes conduct extensive "mass marking" of hatchery salmon. Young salmon are marked by having their fleshy adipose fin removed at the hatchery before release.

The treaty tribes also operate a research-based coded-wire tag program. Tags are inserted into the noses of young salmon. When tagged salmon are harvested and sampled as adults, they provide important information about survival, migration and hatchery effectiveness. The tribes annually mass mark more than 11 million fish and insert coded-wire tags in nearly 4 million fish.

## *Live Spawning Operation Moves to Puyallup Tribe*

The Puyallup Tribe of Indians is rescuing a wild steelhead broodstock program threatened by the closure of the state's Voights Creek Hatchery, which was heavily damaged by floods in 2008.

"If steelhead native to this watershed can't thrive in the wild, the only option is to raise some of them in a hatchery to ensure their survival and make sure their genetic traits aren't lost," said Blake Smith, enhancement biologist with the tribe. "Certain conditions, such as water temperature, can be controlled in a hatchery so fish show a higher rate of survival there than they do in the wild."

Offspring of wild Puyallup steelhead broodstock are raised at a handful of state and tribal hatcheries in the Puyallup River watershed.

With the temporary closure of the Voights Creek Hatchery, the tribe is continuing the steelhead recovery effort at its Diru Creek Hatchery near Puyallup. It's there that some of the threatened, ESA-listed steelhead are undergoing a hand-spawning technique that allows them to be released back into the river after their eggs or milt (sperm) are collected.

"Unlike other salmon that always die soon after they spawn, a portion of steelhead return more than once to spawn," Smith said.

Typically, eggs and milt are taken from salmon after they are killed. In the live spawning process, female fish are injected with air to push out some of their eggs. Male fish are spawned in a traditional manner – hand-squeezing milt – but are anesthetized instead of killed beforehand.

Emmett O'Connell

Terry Sebastian, Puyallup fisheries biologist, removes an adult steelhead from a fish trap on the White River.

"By not killing the fish to spawn them in the hatchery, we are allowing the fish to take their natural course," Smith said. "Hopefully, now that they have a chance to come back, they'll come back and spawn again."

Historic low runs of Puyallup River steelhead have become common in recent years.

For the past three years, adult steelhead have been collected in a trap on the White River – a tributary to the Puyallup – and held at Voights Creek until they were spawned. Their offspring were raised at Voights until they were transported to the Puyallup tribal facility at Diru Creek and finally to the Muckleshoot Tribe's White River Hatchery for release. With Voights Creek offline for at least a year, the fish will be spawned and raised at Diru until they are transported to White River.

# Salmon Habitat Management

Kari Neumeyer

Taking advantage of newly restored habitat, a chinook salmon spawns in a side channel of the North Fork Nooksack River.

Harvest management and hatchery practices aren't enough to sustain healthy salmon populations. To make the most of advances in harvest and hatchery management, the habitat must be improved. Protection and restoration of habitat quality and quantity are essential for salmon recovery.

Salmon habitat has been lost and degraded steadily for the past 150 years as the non-Indian population in western Washington has exploded. Forests have been cleared, fish passage blocked by dams and culverts, and the entire region criss-crossed with roads.

The tribes believe watershed- and stock-specific limiting factors must be addressed to restore and improve the productivity of naturally spawning salmon. Watershed-specific plans for salmon recovery must be developed by the treaty tribal and state co-managers in collaboration with stakeholders.

The treaty Indian tribes are working hard to restore some of that lost habitat. Dozens of engineered logjams are being built to return natural processes to rivers and streams and help form new spawning and rearing habitat.

Tribes extensively monitor water quality for pollution and to ensure that factors such as dissolved oxygen levels are adequate for salmon and other fish. Tribes also collaborate with property owners to improve salmon-bearing stream habitat on private land.

To make limited federal funding work to its fullest, the tribes partner with state agencies, environmental groups, industries and others through collaborative habitat protection, restoration and enhancement efforts.

## *Cooperation Essential to Habitat Management*

Cooperation has been the keystone of natural resources co-management in western Washington for decades. Nowhere is the need for cooperation greater than in habitat restoration and protection, because of the enormity of the task.

One such cooperative habitat management effort is the Salmon and Steelhead Habitat Inventory and Assessment Program (SSHIAP). This state and tribal partnership created in 1995 provides a "living" database for local and regional habitat analyses. The program documents and quantifies past and current habitat conditions, assesses the effect habitat loss and degradation have on salmon and steelhead stocks, and assists in development of strategies. SSHIAP produces an annual "State of Our Watersheds Report" that helps provide a blueprint for salmon recovery.

The federal government has aided tribes in their salmon recovery efforts through the Pacific Coastal Salmon Recovery Fund. PCSRF projects are making significant contributions to the recovery of wild salmon throughout the region.

In western Washington alone, the PCSRF has helped restore more than 300 miles of streamside habitat, remove more than 100 fish passage barriers and restore more than 100 acres of wetland and estuarine habitat. PCSRF funding for most of these projects goes further because tribes leverage the funding through cooperation with local governments, conservation groups and others.

## *Nooksack Tribe's Restoration Lures Spawning Chinook*

Chinook salmon spawned last summer in a North Fork Nooksack River side channel that was restored a year earlier by the Nooksack Tribe.

The side channel was dry during the summer spawning season before the tribe constructed six logjams to redirect the flow of water. The aim was to increase flow into the existing side channel to provide stable spawning habitat that experiences less scour in the winter.

In late August, less than a year after the logjams were completed, tribal and state biologists were delighted to see chinook salmon spawning in the newly watered channel. A survey at the likely peak of spawning found 34 live chinook, 32 carcasses and 31 redds (egg nests).

"It's exciting that salmon are taking advantage of the newly formed habitat," said Victor Insera, the tribe's watershed restoration coordinator. "It gives the tribe's construction crews a real sense of accomplishment."

The inspiration for the restoration was a nearby forested channel island known as Lone Tree, where a tall cottonwood is home to an eagle's nest. A natural logjam helped create what is left of the island, which provides stable ground for trees to mature and eventually contribute natural wood that is critical to forming good salmon habitat.

Historically, logjams enabled islands and side channels to form, but those have been disappearing during the past 100 years, largely because of the loss of woody debris.

The salmon recovery plan for the watershed listed channel instability as the highest priority limiting factor for North Fork Nooksack spring chinook, and identified Lone Tree as a restoration priority.

Work began in September on the second phase of the project, building additional logjams to create more secondary channels and to encourage the river to flow into the reconnected side channel.

# Regional Cooperation

During the past 30 years, the spirit of cooperation in western Washington has flourished, as seen in a series of collaborative conservation processes. As co-managers of salmon, shellfish and wildlife, tribes are active participants in all of these processes. They include:

- Puget Sound Partnership;
- Ocean Ecosystem Management Initiative;
- Timber/Fish/Wildlife Forests and Fish Report; and
- Coordinated Tribal Water Resources Program.

## Puget Sound Partnership

The tribes have a high standard for the recovery of Puget Sound – they want to clean it up enough so that they can harvest and eat fish and shellfish every day.

The Puget Sound Partnership was created by Gov. Chris Gregoire in 2005 to recover Puget Sound's health by 2020. In 2007, the Partnership was established as a state agency.

Treaty tribes in western Washington have taken a leadership role in this effort, on top of their other ongoing natural resources responsibilities. NWIFC Chairman Billy Frank Jr. co-chaired the development of the Partnership with former Environmental Protection Agency Administrator Bill Ruckelshaus, and serves on the Partnership's Leadership Council.

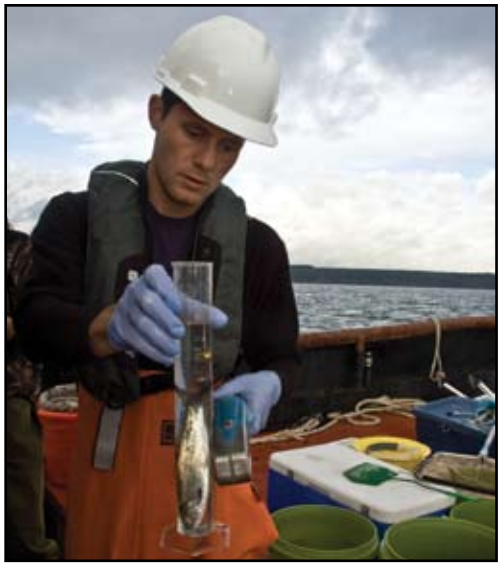
The Puget Sound Partnership's Action Agenda was adopted in 2008 to serve as a guide to Puget Sound restoration and protection efforts for years to come. Tribes were active participants in the development of this document.

The Action Agenda provides critical data and a strategy for tackling threats to the waters in and around Puget Sound.

The goals are to protect the last remaining intact places, restore damaged and polluted sites, stop water pollution at its source, and coordinate all protection, restoration and cleanup efforts.

Tribes always have had a presence in every major watershed in what is now the state of Washington. They have thousands of years of experience in the region, and a vested interest in the health of Puget Sound's natural resources.

As co-managers, with the state, of the region's natural resources, the tribes co-authored the Puget Sound Chinook Salmon Recovery Plan, which is being implemented through the Puget Sound Partnership. The recovery of summer chum in Puget Sound also is being implemented through the Partnership and incorporated in its Action Agenda. Tribal involvement in the Partnership is vital to ensure the success of these salmon recovery efforts.



*Tiffany Royal*

Port Gamble S'Klallam Tribe habitat biologist Hans Daubenberger checks a juvenile salmon for a coded-wire tag.

## *Port Gamble S'Klallam Gathers Nearshore Data*

Despite blustery weather and a small craft advisory, the Port Gamble S'Klallam Tribe spent a chilly October afternoon tow netting the waters just north of Hood Canal. The net, similar to a surface trawl, targeted juvenile salmon on their outward migration from Hood Canal and Puget Sound.

As part of the tribe's juvenile salmon pilot study, natural resources staff collected data weekly between April and October. In addition to tow netting, the tribe used other collection methods, including beach seining and scanning the water column with SONAR.

Similar projects are under way in the Skagit watershed and the San Juan Islands. By conducting parallel studies throughout Puget Sound, biologists are able to compare data over a larger spatial scale. This work is part of the Puget Sound Partnership's larger effort to improve the health of the sound by 2020.

The objectives of Port Gamble's pilot project are to study the current state of the marine environment and assess the health of juvenile fish as they head to sea.

"We want to get a better understanding of the health of salmon coming in and out of Hood Canal," said Hans Daubenberger, the tribe's habitat biologist. "It will help us manage fisheries better."

The tribe is collecting a variety of data, including the weight and length of fish. Genetic and gut samples also are being gathered.

"We know a lot about freshwater systems and what factors play important roles in those habitats, but not so much about nearshore and deep-water marine environments," Daubenberger said. "We want to see which method provides the most information in the most efficient way possible."

Information from the pilot project will be used to develop a five-year study of the area starting next summer.

# Ocean Ecosystem Initiative

Coastal treaty Indian tribes always have relied on the ocean's resources. Species such as salmon, groundfish, whales, clams and crab are central to tribal cultures. The treaty Indian tribes believe that these and all natural resources are connected and that only a holistic ecosystem management approach ultimately can meet the needs of those resources and the people who depend upon them.

The state of Washington, Hoh Indian Tribe, Makah Tribe, Quileute Tribe and the Quinault Indian Nation are working with the National Oceanic and Atmospheric Administration to synthesize common research goals to understand changing ocean conditions and create the building blocks for marine spatial planning. The tribes and state support ocean monitoring and research leading to an ecosystem-based management of fishery resources. Effective management of the ocean ecosystem requires development of basic baseline information against which changes can be measured. Achieving research goals will mean utilizing, expanding on and collaborating with existing physical and biological databases.

In recognition of the challenges facing the Olympic coast ecosystem, coastal tribes and the state of Washington established the Intergovernmental Policy Council to guide management of Olympic Coast National Marine Sanctuary.

The tribes and the state already have developed ocean research and planning goals – many of which mirror recommendations of the U.S. Commission on Ocean Policy – for a coordinated and comprehensive management effort.

Transition to ecosystem-based management requires expansion of resource assessment surveys and ocean monitoring systems off the Olympic coast. This includes augmenting federal trawl surveys and groundfish port sampling, and conducting a comprehensive assessment of the coastal ecosystem.

Another pressing need is to complete sonar mapping and surveying of the seabed off the Olympic coast. Less than 25 percent of the area's seabed has been mapped and surveyed to document species and habitat types. Acquiring this data is essential to effectively address groundfish conservation concerns and minimize interactions with deep-water sponge and coral species.

The waters off the coast of Washington sustain tribal cultures in places such as Second Beach near LaPush, home of the Quileute Tribe.

Debbie Preston

Debbie Preston

Katie Rathmell, CMOP, prepares the research glider Phoebe aboard a Quinault fishing boat.

## *Quinault Ocean Glider Provides Crucial Data*

In the past, the Quinault Indian Nation (QIN) had only occasional glimpses into the health of the vast ocean that is its traditional fishing area, stretching about 50 miles from Grays Harbor north to Destruction Island.

But last summer, thanks to a computer-directed underwater research glider that looks like a motorcycle-sized torpedo with wings, QIN was able to gather four weeks of comprehensive data throughout its fishing area. The Center for Coastal Margin Observation & Prediction (CMOP) worked with QIN marine scientist Joe Schumacker to plan a data-gathering project for the glider, named "Phoebe."

"This mission provided us with important information about the Quinault traditional ocean waters that would be cost-prohibitive to obtain otherwise," Schumacker said.

The glider, deployed and recovered by a QIN fishing vessel, gathered salinity, dissolved oxygen, fluorescence and temperatures at different depths, then transmitted the newly collected data to CMOP.

QIN is particularly interested in dissolved oxygen levels after an episode of low oxygen left hundreds of normally bottom-dwelling creatures on the nation's beaches in 2006.

"We're still looking at the results from the glider's mission," Schumacker said.

Nutrient-rich but oxygen-poor water wells up from the depths and feeds marine life. Natural mixing of the water column is important to offset the negative effects of the deep water's low oxygen levels. The glider mission will help QIN understand where lower oxygen levels occur and if there are any hints of possible fish kills in the future.

"Up until now, the only similar information we can get is from one seasonal buoy in this area and that is just a snapshot of the water quality in that one specific area," Schumacker said. "Phoebe gives us a look at a large piece of the ocean that we really have not had the ability to examine before."

# Coordinated Tribal Water Resources

For nearly 20 years, the treaty Indian tribes in western Washington have partnered with the federal Environmental Protection Agency (EPA) to address water quality issues under the Clean Water Act.

In 2009, the Northwest Indian Fisheries Commission and EPA launched the Water Quality Exchange Network to store, share, manage and analyze data. The network enables member tribes to exchange water quality data with each other for regional scale analysis and also send data to the EPA to meet grant obligations.

Building on the success of the collaboration with EPA, a few years ago the tribes partnered with the U.S. Geological Survey (USGS) to expand their Coordinated Tribal Water Quality Program into a Coordinated Tribal Water Resources Program. As a federal agency within the Interior Department, USGS has a trust responsibility to tribal governments. It also is the preeminent authority among governments for water resources, providing valuable expertise, oversight and guidance to the tribal effort.

While much already has been accomplished in the area of water quality, the Coordinated Tribal Water Resources Program is examining issues of water quantity. In western Washington, climatic changes and urban development are having profound effects on water resources and aquatic ecosystems. This situation will worsen with an expected doubling of the population in the Puget Sound region during the next 20 years.

The Coordinated Tribal Water Resources Program aims to:

- Establish instream flows to sustain viable and harvestable populations of fish.
- Identify limiting factors for salmon recovery.
- Protect existing ground and surface water supplies.
- Review and evaluate administrative decisions, such as proposed water permits and instream flows, and project proposals on- and off-reservation.
- Participate in federal, state and local planning processes for water quantity and quality management.

Emmett O'Connell

John Konovsky, environmental program manager for the Squaxin Island Tribe, measures low flow on Schneider Creek.

## *Squaxin Tribe Studies Low Stream Flow*

The Squaxin Island Tribe is tracking low flows in a dozen small South Sound streams to try to figure out how low the flows can drop in late summer. The tribe is one of 19 treaty Indian tribes in western Washington participating in a regionwide study with the U.S. Geological Survey (USGS) to build a model that can predict low stream flows.

"This is important information for protecting salmon, and it's something we don't know a lot about in ungauged stream systems," said John Konovsky, environmental program manager for the tribe. "The science tells us that the more water there is in summer, the more rearing coho there are."

Tribal staff take weekly recordings during rain-free periods in late summer and early fall – when stream flows are the lowest – carefully quantifying any drop in flow. All streams within the Squaxin Island Tribe's treaty-reserved fishing area depend exclusively on rain or groundwater for their flows.

Understanding low flow variability is important to protect species like coho and trout because they spend a good portion of their lives in fresh water.

"As the water levels drop each summer, salmon habitat disappears and water temperatures increase, which is harmful to salmon," Konovsky said. "Being able to predict that is important."

The tribe is concerned especially about the health of coho, which have been on a downward slide for years. The tribe suspects that a decline in the health of freshwater and saltwater habitat is the cause, but the specific reasons remain a mystery.

"There is no way that the tribe or the USGS could afford to deploy regular gauges on all of the important salmon streams in deep South Sound," Konovsky said. "Developing a model is a much cheaper way to get nearly the same results."

The overall project with USGS will give western Washington tribes a clearer and more comprehensive view of water resources in their treaty areas.

"There's never been this kind of partnership between tribes and a federal agency to look at the big picture of water and streams," Konovsky said. "This is an important step toward protecting and restoring weak salmon runs."

# Timber/Fish/Wildlife

The Timber/Fish/Wildlife Agreement (TFW) is a national success story that has provided a 22-year legacy of collaborative conservation. TFW brings together tribes, state and federal agencies, environmental groups and private forest landowners in a process that ensures protection for salmon, wildlife and other species while also providing for the economic health of the timber industry.

The timber industry's long-range goals of economic stability and regulatory certainty are shared by the tribes, who view industry as a long-term partner in forest management. Through TFW, the timber industry has recognized its impact on water quality, fish and wildlife habitat, and other resources important to tribes' economic, cultural and spiritual survival.

TFW matches the collective experience and expertise of participants in a consensus decision-making process. The TFW Agreement is an organic process that yields to a changing environment. In this adaptive management system, participants understand and encourage evaluation and modification of the agreement to better protect natural resources and improve forest practices. Experience determines whether the needs of the parties are being met.

The tribes offer a centuries-old tradition of resource stewardship, practice state-of-the-art technological innovation, and are located strategically to respond to the critical management needs in their local watersheds.

## *Forests and Fish Report*

A variety of factors – including the listing of several western Washington salmon stocks under the federal Endangered Species Act (ESA), ongoing statewide water quality degradation, and concern over the continued economic viability of the timber industry – brought TFW participants together in November 1996 to develop joint solutions to these problems. The result was a plan to update forest practices rules called the Forests and Fish Report (FFR), which was completed in April 1999, and later adopted by the Washington State Legislature.

The FFR is based on four goals:

- To provide compliance with the ESA for aquatic and riparian-dependent species on non-federal forestlands;
- To restore and maintain riparian habitat on non-federal forestlands to support a harvestable supply of fish;
- To meet the requirements of the federal Clean Water Act for water quality on non-federal forestlands; and
- To maintain the economic viability of the timber industry in the state of Washington.

Kari Neumeyer

Upper Skagit technician Tim Shelton (left) and TFW biologist Doug Couvelier survey a stream near Day Lake.

## *Upper Skagit Tribe Finds Fish, Verifies Streamside Buffer*

Protecting fish habitat begins with determining where the fish are.

Biologist Doug Couvelier and field technician Tim Shelton, with the Upper Skagit Tribe, waded up a tributary from its confluence with Day Lake to establish how much of the creek is being used by fish. Using an electroshocker strapped to a backpack, Couvelier created an electrical field that attracted fish to a submerged electrode. They marked the spots where fish were sighted as they moved 3,000 feet upstream, finding fish within 400 feet of the main road.

"We found lots of fish throughout the stream, even in steep, swift-moving reaches," Couvelier said. Species found in Day Lake include rainbow, cutthroat and brook trout; the lake is not accessible to anadromous fish.

Forest practices on private land in western Washington are managed through the state Forest Practices Board under the Forests and Fish Report Habitat and Conservation Plan and the Timber/Fish/Wildlife Agreement.

By physically walking a stream and denoting the last reach where fish are found, tribal biologists make sure that fish-bearing streams are given the tree buffer protection needed to protect fish and habitat. They also establish that field maps accurately show whether fish are present in a stream.

Working with timber companies, tribes make sure logging practices don't remove too many of the trees that are required to keep water cool, filter runoff, stabilize banks and create pools for fish to rest and feed. Where fish are found, timber companies are required to maintain an appropriate streamside buffer.

Riparian buffers consist of a core zone, inner zone and outer zone that vary in width depending on stream size and site class. No harvest is allowed in the core zone. Inner zone harvest is allowed under certain conditions, and harvest in the outer zone requires that 20 trees per acre be retained.

Under current regulations, a fish-bearing stream of the size and site class of the one near Day Lake calls for a 50-foot core zone, 55-foot inner zone and 35-foot outer zone.

# Wildlife Management

The treaty Indian tribes work cooperatively with the state to co-manage wildlife resources in western Washington. Together, the co-managers are developing regional hunting management agreements for animals such as deer, elk, bear, goats and cougars. The agreements coordinate hunting seasons, harvest reporting and enforcement. Other information crucial to wildlife management, such as herd size and mortality estimates, also will be shared under the agreements.

Western Washington treaty tribal hunters account for a very small portion of the total combined deer and elk harvest in the state. According to statistics for 2008-2009, tribal members harvested 375 elk and 498 deer, while non-Indian hunters harvested 8,024 elk and 37,892 deer.

Tribal hunters do not hunt for sport and most do not hunt only for themselves. Tribal culture in western Washington is based on extended family relationships. A tribal hunter usually shares his game with several families. In some cases, tribes may designate a hunter to harvest one or more animals for elders or families that are unable to hunt. All tribes prohibit hunting for commercial purposes.

As a sovereign government, each treaty tribe develops its own hunting regulations and ordinances governing tribal members. Each tribe also maintains an enforcement program to ensure compliance with tribal regulations. The ratio of tribal enforcement officers to treaty hunters is higher than the ratio of state enforcement officers to non-Indian hunters.

Tribes set seasons based on the ability of the resource to support harvest. Before opening any area to hunting, many tribes forward their regulations to the state Department of Fish and Wildlife for review and comment. Tribes also share their harvest data with the agency.

Tribal hunters are licensed by their tribes and must obtain tags for each big game animal they wish to hunt. All tribal hunters carry photo identification cards that include their name, date of birth and tribal affiliation.

If a tribal member is found in violation of tribal regulations, he is cited in tribal court. Penalties can include fines and loss of hunting privileges. In most cases, tribal hunting regulations address the same harvest and safety concerns as state rules, such as prohibiting the carrying of loaded firearms in vehicles.

*Lower Elwha Klallam Tribe*

Lower Elwha staff Kim Sager-Fradkin (left), Brandon Nickerson (center) and Phillip Blackcrow monitor an elk's temperature and collect samples.

## *Lower Elwha Studies Roosevelt Elk*

With an interest in the long-term sustainability of elk populations on the north Olympic Peninsula, the Lower Elwha Klallam Tribe has started a three-year research project to gather baseline data about the Roosevelt elk herd that resides between the Elwha River and Clallam Bay.

The tribe has two key goals: to gather basic ecological information on the Roosevelt herd prior to deconstruction of the Elwha dams in 2011; and to develop methods for longer-term monitoring of these herds. This will allow the tribe to determine if the elk population is increasing, decreasing or remaining stable over time. This study will provide the tribe with information about seasonal elk movement patterns, habitat requirements, and population size and structure.

The tribe is focusing on the Pysht Game Management Unit (GMU), which runs north of Highway 101 from the Elwha River west to Clallam Bay. Very little is known about the herds in this area, which includes the Elwha and Indian valleys and the Joyce-Piedmont area.

Frequent inhabitants of river valleys, elk rely on the Elwha River floodplain for food, overwintering and calving. Deconstructing the 108-foot Elwha Dam and the 210-foot Glines Canyon Dam will help restore more than 500 acres, including floodplain habitat, which have been inundated with water for nearly 100 years.

"The tribe is interested in how elk use floodplain habitats along the Elwha before the dams are removed," said Lower Elwha Klallam Tribe wildlife biologist Kim Sager-Fradkin. "We are also interested in developing methods for long-term population monitoring throughout the entire Pysht GMU."

For the next three years, the tribe will collect fecal pellets for DNA analysis, conduct helicopter aerial surveys, and capture several elk to equip with Global Positioning System (GPS) radio-tracking collars.

The tribe always has used elk for subsistence, cultural and spiritual purposes, and strives to preserve its treaty-reserved right to hunt. This elk management program is aimed at collecting data that will allow the tribe and Washington Department of Fish and Wildlife to set more biologically based harvest regulations, thus ensuring the long-term sustainability of these herds, Sager-Fradkin said.

# Shellfish Management

Shellfish have been a mainstay of western Washington Indian tribes for thousands of years and remain important today for economic, subsistence and ceremonial purposes.

As a co-manager of the shellfish resource, each treaty Indian tribe maintains a shellfish program and manages its shellfish harvest cooperatively with other tribes and the state through resource-sharing agreements.

Tribal shellfish enhancement results in higher and more consistent harvest levels and benefits both tribal and non-Indian diggers. Tribes also conduct research on underutilized species such as Olympia oysters and sea urchins, to develop better management systems and understanding of the marine ecosystem.

Tribes have two distinct types of shellfish harvest – commercial and ceremonial/subsistence. Shellfish harvested during a commercial fishery are sold to licensed shellfish buyers who either sell directly to the public or to other distributors. Along with state co-managers, tribes closely monitor beaches to make sure harvested shellfish is safe to eat.

Ceremonial and subsistence harvests of shellfish, which have a central role in tribal gatherings and daily nutrition, are intended for tribal use only.

Preliminary data for 2008, the most recent data available, indicate that treaty tribes in western Washington commercially harvested approximately 790,000 pounds of manila and native littleneck clams; 2.5 million pounds of geoduck clams; nearly 700,000 pounds of oysters; 6.5 million pounds of crab; 400,000 pounds of razor clams; and 200,000 pounds of shrimp. These fisheries occur throughout Washington coastal areas and Puget Sound.

Olive shells are collected by Makah tribal members for use in necklaces, headbands and button blankets.

Debbie Preston (2)

Makah tribal members Evan Bowechop (left) and Michael Murner count olive shells as part of a summer internship with the tribe's natural resources department.

## *Makah Surveys Purple Olive Shells*

The chattering sound of hundreds of decorative purple olive shells has accompanied Makah tribal dancers for at least 500 years. The 3/4-inch shells have been found in the oldest archeological digs in Neah Bay. Holes pierced in the end indicate they were used for necklaces, headbands, belts and other decorations.

Makah tribal member Evan Bowechop, 16, was reminded of the history as he counted the living shells in the surf where they are found on Hobuck Beach near Neah Bay. It was part of his summer intern job with the Makah Natural Resources Department. He and partner Michael Murner, 17, conducted a survey of the olive shell population to help Makah natural resources managers get an idea of the numbers and locations of the small, snail-inhabited shell.

"The idea is to have the interns do this survey each summer so we can start to establish population patterns," said Jonathan Scordino, marine mammal biologist for the Makah Tribe. Even as the interns worked one foggy morning, a group of tribal members harvested the shells a little farther down the beach.

Each year, students work in a variety of natural resources departments within the tribe, learning about different kinds of jobs and assisting with natural resources management activities. The hope is that some tribal members will become interested in pursuing advanced education in a related field and come back to work for the tribe.

The interns finished the summer by presenting a paper to tribal members about their activities, including one by Murner on the olive shells.

"It was an interesting summer," Bowechop said." It kept me busy and I learned a lot."

***"We, the Indians of the Pacific Northwest, recognize that our fisheries are a basic and important natural resource and of vital concern to the Indians of this state, and that the conservation of this natural resource is dependent upon effective and progressive management. We further believe that by unity of action, we can best accomplish these things, not only for the benefit of our own people, but for all of the people of the Pacific Northwest."***

*– Preamble to the NWIFC Constitution*

The treaty tribes in western Washington are Hoh, Jamestown S'Klallam, Lower Elwha Klallam, Lummi Nation, Makah, Muckleshoot, Nisqually, Nooksack, Port Gamble S'Klallam, Puyallup, Quileute, Quinault Indian Nation, Sauk-Suiattle, Skokomish, Squaxin Island, Stillaguamish, Suquamish, Swinomish, Tulalip and Upper Skagit.

The Northwest Indian Fisheries Commission (NWIFC) was created in 1974 by the tribes as a result of the *U.S. v. Washington* litigation that affirmed their treaty rights to salmon, wildlife, shellfish and other resources. The ruling further established the tribes as natural resources co-managers with the state.

The NWIFC is a support organization that provides direct services to the 20 member tribes to assist with natural resources management. The NWIFC employs about 70 full-time employees and is headquartered in Olympia, Wash., with satellite offices in Forks, Kingston and Mount Vernon.

The tribes select commissioners who develop policy and provide direction. The commissioners elect a chairman, vice-chairman and treasurer. The commission's executive director supervises the staff that implements the policies and fisheries management activities approved by the commissioners.

# NWIFC Activities

## *Fisheries Management*

- Long-range planning, wild salmon recovery efforts and federal Endangered Species Act implementation.
- Developing pre-season fishing agreements and in-season forecasts.
- Post-season fishery analysis and reporting.

## *Quantitative Services*

- Administering and coordinating the Treaty Indian Catch Monitoring Program.
- Providing statistical consulting services.
- Conducting data analysis of fisheries studies and developing study designs.
- Updating and evaluating fishery management statistical models and databases.

## *Enhancement Services*

- Coded-wire tagging of 4 million fish at tribal hatcheries to provide information critical to fisheries management.
- Providing genetic, ecological and statistical consulting for tribal hatchery programs.
- Providing fish health services to tribal hatcheries.

## *Habitat Services*

- Coordinating policy and technical discussion between tribes and federal, state and local governments, and other interested parties.
- Coordinating, representing and monitoring tribal interests in the Timber/Fish/Wildlife Forests and Fish Report process, Coordinated Tribal Water Resources and Ambient Monitoring programs.
- Implementing the Salmon and Steelhead Habitat Inventory and Assessment Project.

## *U.S./Canada Pacific Salmon Treaty*

- Facilitating inter-tribal and inter-agency meetings, developing issue papers and negotiation options.
- Serving on the pink, chum, coho, chinook, Fraser sockeye and data-sharing technical committees, as well as other work groups and panels.
- Coordinating tribal research and data-gathering activities associated with implementation of the Pacific Salmon Committee.

## *Information and Education Services*

- Producing news releases, newsletters, brochures, reports, curricula, videos, photographs, exhibits and maintaining the commission's Web site, *nwifc.org*, to educate the public about tribal natural resources management activities and objectives.
- Responding to hundreds of public requests for information about the tribes and their tribal natural resources management activities.
- Monitoring state and federal legislation and coordinating tribal input.

Northwest Indian Fisheries Commission
6730 Martin Way E.
Olympia, WA 98516
(360) 438-1180
nwifc.org