A person wearing traditional red and white patterned clothing and a red headband is shown in profile, holding a small brown animal (possibly a chipmunk) in their hands. They are standing on a rocky bank next to a shallow stream. The person is holding a small object in their left hand, from which a misty spray of water or steam is rising. The background shows a rocky stream bed and a grassy bank under bright sunlight.

Tribal Natural Resource Management 2008

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

Introduction

As the co-managers of the region's natural resources, the 20 treaty Indian tribes in western Washington are committed to a holistic, cooperative conservation approach to stewardship. Tribes play an important role in nearly every aspect of natural resource management in western Washington.

Tribes in western Washington provide critical scientific, political, cultural and historical perspectives to the collaborative natural resource management processes that characterize the region. Tribes are strategically located in each major watershed in the region and are able to quickly respond to the needs of those ecosystems. Treaty tribes in western Washington are Hoh, Jamestown S'Klallam, Lower Elwha Klallam, Lummi, Makah, Muckleshoot, Nisqually, Nooksack, Port Gamble S'Klallam, Puyallup, Quileute, Quinault, Sauk-Suiattle, Skokomish, Squaxin Island, Stillaguamish, Suquamish, Swinomish, Tulalip and Upper Skagit.

These tribes created the Northwest Indian Fisheries Commission (NWIFC) following the 1974 ruling in *U.S. v. Washington* (the Boldt decision) that reaffirmed their treaty-reserved rights to salmon, wildlife, shellfish and other resources. The ruling further established the tribes as natural resource co-managers with the state of Washington.

The NWIFC is a support service organization that provides direct assistance to tribes ranging from fish health programs to data modeling. The NWIFC also provides a forum where tribes can address issues of mutual concern and acts as an information clearinghouse and coordinating body.

Management challenges

New natural resource management challenges erupt daily for the tribes. "Dead zones" have developed in Hood Canal and off the southwest Washington coast. These low-oxygen areas are killing hundreds of thousands of fish, crab and other species.

The Puget Sound ecosystem is rapidly deteriorating as millions of new residents are expected to double the region's population in the next 20 years. Pollution washed from roads by stormwater runoff is acting like a huge, slow-moving oil spill steadily degrading the health of the sound and all living things connected to it.



A Quileute tribal fisherman tends his net at the mouth of the Quillayute River near LaPush.

NWIFC: D. Preston

Tribal, state and federal natural resource co-managers face increasingly more difficult challenges as fish, shellfish and wildlife habitat continues to be degraded and disappear. Bull trout and steelhead in Puget Sound are the newest additions to the federal Endangered Species Act's "threatened" list. They join three western Washington salmon stocks also listed as "threatened," and southern resident orcas, which are listed as "endangered" and are among the most chemically contaminated marine mammals in the world.

Cooperation critical

Through a spirit of cooperation that has defined natural resource management in the region since the 1980s, tribes partner with governments, agencies and organizations to effectively meet the needs of the region's natural resources. This management philosophy achieves an economy of scale that enables efficient and effective use of limited funding.

Natural resource co-management in Washington is guided in large part by a handful of collaborative conservation efforts. They include the Puget Sound Partnership, Ocean Ecosystem Management Initiative, Timber/Fish/Wildlife Agreement and Coordinated Tribal Water Resources Program. These processes complement and inform fundamental tribal co-management programs for salmon, shellfish and wildlife.

Federal Ruling Supports Treaty Rights

Tribes won a major victory for salmon and their habitat in 2007 when federal court Judge Ricardo Martinez ruled that state culverts blocking fish and diminishing salmon runs violate Indian treaty fishing rights. “This duty arises directly from the right of taking fish that was assured to the Tribes in the Treaties, and is necessary to fulfill the promises made to the Tribes regarding the extent of that right,” Martinez ruled in a summary judgment.

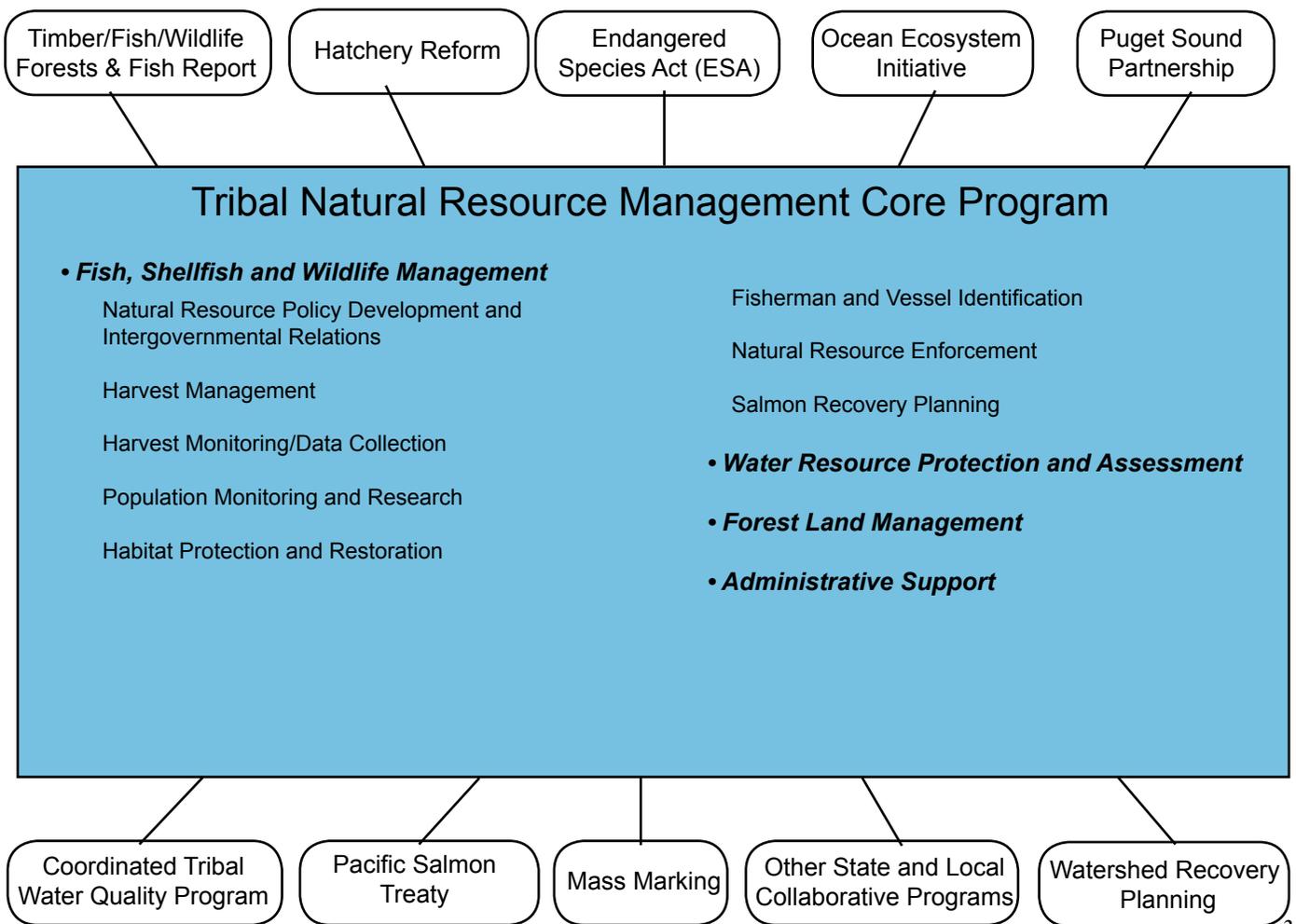
In western Washington alone, more than 1,100 culverts owned by the state Department of Transportation and Department of Natural Resources block more than 750 miles of salmon stream and 2.5 million square meters of habitat. It was estimated that repairing the fish-blocking culverts on the state’s timetable could take as long as 100 years, but by then, few, if any, salmon would be left. The tribes and state are sitting down to develop a timely, more prioritized plan for repairing the culverts.

While the federal courts have consistently ruled in favor of the tribes and their treaty-reserved rights, each tribe knows that the battle to preserve, protect and enhance the natural resources of this region can only be won if everyone works together.

“Cooperation is the key,” says Billy Frank Jr., NWIFC chairman. “If we work together – all of us – there’s nothing we can’t do.”

As tribes continue their leadership role in natural resource co-management, their treaty-reserved rights continue to be upheld not only to the benefit of the resources, but for society as a whole. This report provides a broad overview of tribal natural resource management activities by the treaty Indian tribes in western Washington during Fiscal Year 2007. More information is available from tribal Web sites and the NWIFC at www.nwifc.org.

Tribal Natural Resource Management Core Program and Collaborative Initiatives



Cooperative Management

Cooperation has been the keystone of natural resource management in Washington since the early 1980s. That's when the treaty Indian tribes and state of Washington, as co-managers, chose cooperation over litigation to resolve their differences.

Since then, a spirit of cooperation has flourished and manifested itself in a series of collaborative conservation processes that are effectively guiding natural resource management in western Washington.

Some of these processes include the Puget Sound Partnership, Ocean Ecosystem Management Initiative, Timber/Fish/Wildlife Agreement and Coordinated Tribal Water Resources Program.



Billy Frank Jr., chairman of NWIFC and member of the Puget Sound Partnership Leadership Council.

Puget Sound Partnership

Shared Strategy Evolves

In 2007, Puget Sound steelhead were listed as “threatened” under the federal Endangered Species Act (ESA), joining three other western Washington salmon stocks – Puget Sound chinook, Hood Canal/Eastern Strait of Juan de Fuca summer chum and Lake Ozette sockeye.

When chinook and summer chum were listed in 1999, salmon leaders created the Shared Strategy for Puget Sound Salmon Recovery, a bottom-up collaborative approach to wild salmon recovery that links ongoing initiatives at the tribal, local, state and federal levels. The effort was led by former Environmental Protection Agency Administrator Bill Ruckelshaus and NWIFC Chairman Billy Frank Jr.

After nearly six years of intense work, a recovery plan for Puget Sound chinook and Hood Canal summer chum that meets ESA requirements was delivered to the National Marine Fisheries Service (NMFS), the federal agency charged with implementing the ESA. The endorsement and participation of NMFS in the Shared Strategy process was critical to the success of the plan that is now being implemented, which addresses all the factors for the chinook's decline in Puget Sound.

The 10-year trajectory for recovery of Puget Sound chinook integrates harvest, hatcheries and habitat in a plan that considers the needs of both people and fish.

The regional policy committee that guided development of the recovery plan has further expanded its membership and is now known as the Puget Sound Salmon Recovery Council. The group includes representatives from each of the 14 watersheds in Puget Sound, as well as representatives from tribal, local, state and federal governments, environmental groups and business interests.

The success of the Shared Strategy and its inclusive approach to addressing natural resource management challenges led Washington Gov. Chris Gregoire in 2005 to create the public/private Puget Sound Partnership to significantly improve the health of Puget Sound by 2020. In 2007, the Partnership was established as a state agency.

Partnership Gears Up

Frank and Ruckelshaus were selected to co-chair development of the Partnership and now serve on the Partnership's Leadership Council. The Leadership Council is the governing body of the Puget Sound Partnership. Its seven members are leading citizens chosen from around the sound and appointed by the governor.

To jump-start the initiative, Gov. Gregoire in 2006 designated \$52 million to clean up toxic sites, prevent oil spills, restore nearshore, estuary and salmon habitats, and improve wastewater and sewer facilities at six marine state parks. Additional state funding for the Partnership is anticipated from the 2008 Legislative session. Gov. Gregoire's 2008 supplemental budget includes \$2.2 million for the development of the Partnership's Action Agenda – a roadmap for restoration – to be completed by Sept. 1, 2008.

Federal funding has begun to flow as well, with a \$20 million appropriation from Congress. The funding is directed to the U.S. Environmental Protection Agency's research and remedial program, which addresses the overall health of the Puget Sound ecosystem.

At the core of the Partnership's comprehensive restoration effort is a new approach to address the entire Puget Sound ecosystem. For efficiency, and because the Puget Sound Partnership leaders are the same as the leaders of the Shared Strategy effort, the recovery of chinook and summer chum in Puget Sound is being implemented through the Partnership and incorporated in its Action Agenda.

The Partnership's infrastructure continues to develop as staff is hired and assignments are made to the Ecosystem Coordination Board, science panels and other advisory groups. The Ecosystem Coordination Board's main role is to advise the Puget Sound Partnership's Leadership Council on carrying out its responsibilities. The Board is made up of 27 individuals representing specific interests in the region. The Science Panel provides independent scientific advice to the Leadership Council.

As the roadmap for Puget Sound restoration and protection efforts for years to come, the Partnership's Action Agenda is guided by the following principles:

- ◆ Everyone is an essential participant in the process.
- ◆ Collaboration and cooperation across sectors and interests is vital.
- ◆ The Action Agenda creation process will be clear and transparent.
- ◆ Public engagement is critical.
- ◆ The process should include a scientific review of proposed actions.
- ◆ We will work with existing organizational and decision-making structures rather than create new processes.

To develop the Action Agenda, the Partnership is working with local watershed groups, tribes, cities, counties, special purpose districts and the private sector in seven geographic Action Areas of Puget Sound. These areas collectively encompass the entire Puget Sound basin and include the uplands that drain to the marine waters. They are:

- ◆ Hood Canal;
- ◆ Strait of Juan de Fuca;
- ◆ San Juan Islands;
- ◆ Whidbey Island;
- ◆ North central Puget Sound;
- ◆ South central Puget Sound; and
- ◆ South Puget Sound.

Local plans, programs and actions that address the health of Puget Sound will make up a large part of the Action Agenda. Representatives from tribes, watershed groups, local governments and private sector institutions will work together in each Action Area to:

- ◆ Consider scientific information on the ecosystem risks in the area.
- ◆ Identify key actions to address these risks.
- ◆ Evaluate existing programs and plans.
- ◆ Recommend area-specific actions, programs and strategies for adoption in the Action Agenda.

"The goals for Puget Sound cleanup are pretty simple. I want families to be able to swim in it, fish in it and dig shellfish from its beaches," Gregoire said.

"We couldn't agree more," said NWIFC Chairman Frank. "The only way we're going to get there is by working together."

Suquamish Tribe Studies Fish in Nearshore Area



Staff from the Suquamish Tribe, Washington Sea Grant, Washington Department of Fish and Wildlife and Kitsap County, plus resident volunteers, haul in a beach seine during a nearshore assessment of Kitsap County. *NWIFC: T. Royal*

Tiny bubbles disturb the water's surface as the Suquamish Tribe's research boat approaches Pilot Point, one of the last undeveloped beaches on the east side of Kitsap County. It could be herring or shiner perch rippling the water.

While these types of forage fish are important to the nearshore environment, the biologists on board are looking for salmon. A 100-foot-long beach seine is laid out and hauled onto the beach in hopes of finding salmon in these waters.

This scene in early August was part of a beach seine study led by the Suquamish Tribe, complementing the East Kitsap nearshore habitat assessment coordinated by Kitsap County. The focus of the study is to gather information on juvenile salmon living in the nearshore during the spring and summer. The study also is aimed at identifying areas that need habitat protection or restoration to help boost natural salmon production.

"We actually don't know much about the nearshore habitat in Puget Sound," said Paul Dorn, the Suquamish Tribe's salmon recovery coordinator. "We need to document the changes that are occurring in these habitats to better understand how these changes affect the wild salmon's use of our estuaries and nearshore."

Amidst the mass of shiner perch, herring, crabs and sculpin caught throughout the day, a handful of adult pink salmon and half dozen juvenile coho were gathered for observation.

Juvenile salmon feed and rear in nearshore habitat for up to two years before moving out to sea. Eelgrass thrives in this area, providing food and shelter for the young fish. This nearshore habitat throughout Puget Sound is often damaged by construction of man-made structures, such as bulkheads, and sources of pollution, such as failing septic systems.

The project is examining nearshore habitat for about 150 miles, from the southern end of Kitsap County, at Manchester, to the very tip of the peninsula, at Foulweather Bluff. The project started in June 2006 and will continue through 2008.

Funding for the project comes from the Pacific Coastal Salmon Recovery Fund. Other participants in the study are Washington Department of Fish and Wildlife, Washington Sea Grant, city of Bainbridge Island, Kitsap County, National Oceanic and Atmospheric Administration, U.S. Geological Survey and local volunteers.



The Pacific Ocean off the Washington coast has many secrets that will only be discovered with dedicated research funding.

NWIFC: D. Preston

Ocean Ecosystem Initiative

Coastal treaty Indian tribes have always relied on the ocean's resources. Species such as salmon, groundfish, whales 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 can ultimately be successful in meeting the needs of those resources and the people who depend upon them.

As co-managers of the natural resources along the Washington coast, tribes are steadily confronted with increasing demands to address natural resource and environmental management issues. Among those is the death of thousands of bottom-dwelling fish and Dungeness crab caused by extremely low oxygen levels in waters off the Washington and Oregon coasts each summer.

The state of Washington, the Hoh Indian Tribe, the Makah Tribe, the Quileute Tribe and the Quinault Indian Nation are launching a five-year ocean monitoring and research initiative to support a transition to ecosystem-based management of fishery resources.

Effective management of the ocean ecosystem requires development of basic, baseline information against which changes can be measured. This initiative will expand on and collaborate with existing physical and biological databases to enhance ecosystem-based management capabilities. In turn, it will support the ongoing efforts of the state and tribes to manage the fishery resources in this distinct ecosystem.

Following an Ocean Blueprint

The need for an ecosystem-based approach to address fisheries management and environmental issues in Washington coastal waters has come into sharp focus in recent years, fueled in large part by major studies conducted by the U.S. Commission on Ocean Policy and the Pew Charitable Trusts.

To address serious declines in water quality, losses of species and habitats, and a host of other problems plaguing coastal waters, the U.S. Commission on Ocean Policy in 2004 delivered recommendations for a coordinated and comprehensive national ocean policy to the president and Congress. The Commission's final report, "An Ocean Blueprint for the 21st Century," contains 212 recommendations addressing all aspects of ocean and coastal policy. Among those recommendations were:

- ◆ Restructure U.S. ocean governance, including establishing a National Ocean Council within the Executive Office of the president.
- ◆ Strengthen the National Oceanic and Atmospheric Administration (NOAA).
- ◆ Increase spending on marine research and education.

Transition to ecosystem-based management requires expansion of the current resource assessment surveys and ocean monitoring systems off the Olympic coast. This proposal would improve this basic data by building on collaborative efforts of tribal, state, and federal governments in three main ways:

- ◆ Augment NOAA's Northwest Science Center's existing trawl survey data with additional state and tribal survey data from areas on the continental shelf and slope that are not yet sampled.
- ◆ Expand existing groundfish port sampling program for the region. Both the trawl survey and sampling data are essential to evaluate stock status and abundance.
- ◆ Conduct a comprehensive assessment of the coastal ecosystem and its associated species. Effective conservation actions for rockfish and other groundfish species will depend on accurate knowledge and distribution of the seafloor habitat types and associated species.

The establishment of this finer scale biological database is an essential step toward improving the region's forecasting capability of stock status and abundance.

The Ocean Ecosystem Initiative will provide the opportunity to improve understanding of ocean climate interactions within the region and the effects on the region's fishery resources. The current stock assessment does not allow resource managers to make accurate connections between oceanographic conditions and changes in local stock populations.

The effort also aids the implementation of the priorities and strategies outlined by the U.S. Commission's Ocean Plan and its associated ocean research planning efforts. Federal priorities for ocean science during the next decade focus on three critical elements:

- ◆ Developing the understanding and capacity to forecast certain ocean and ocean-influenced processes and phenomena.
- ◆ Providing scientific support for ecosystem-based management.
- ◆ Deploying a robust ocean monitoring system.

Intergovernmental Council to Guide Effort

The marine environment off the Olympic Peninsula is among the most pristine in the United States. These waters are important habitat for a wide variety of fish, shellfish, seabirds and marine mammals. The region supports important fishery resources, including several salmon species, groundfish and shellfish. Marine resources form an economic base for the coastal communities in this area. The region and its marine resources face growing pressures from fishing, tourism, shipping, invasive species and climate change.

In recognition of the challenges facing the Olympic coast ecosystem, the Hoh Tribe, Makah Tribe, Quileute Tribe, Quinault Indian Nation and the state of Washington established the Intergovernmental Policy Council. This council was developed to provide a regional forum and develop recommendations for the management of coastal resources in the Olympic Coast Marine Sanctuary. The Ocean Ecosystem Initiative was developed to focus on a subset of issues comprising the collective management priorities for the Olympic coast.

The state of Washington and coastal treaty tribes plan to jointly implement enhanced rockfish assessment and habitat mapping. Also included within the initiative is a nearshore observation and education program, expansion of ocean monitoring buoys and establishment of long-range high-frequency radar sites to improve weather forecasts.



From left, Vivian Lee, Hoh Tribal chairwoman; Micah McCarty, Makah tribal council member; Washington Gov. Chris Gregoire; NOAA Chief of Staff Scott Rayder (standing); Daniel Basta, director of NOAA's National Marine Sanctuary Program; Chris Morganroth, Quileute tribal policy member; and Fawn Sharp, Quinault Indian Nation tribal chairwoman, complete the signing of the charter to create the Intergovernmental Policy Council, a forum to coordinate management activities of marine resources of the Olympic Coast National Marine Sanctuary. *NWIFC: D. Preston*

Rockfish Assessment

Tribes plan to conduct a comprehensive stock assessment of rockfish resources along the continental shelf and slope off the Olympic coast. To complement this effort, tribes also want to enhance existing groundfish port sampling.

Tribal and state assessment surveys will focus on areas not sampled by the National Oceanic and Atmospheric Administration's Northwest Science Center trawl surveys because of seafloor conditions. A state, tribal and federal technical workgroup will be convened to develop the sampling plan and assessment approaches necessary to incorporate this additional survey information into the biennial stock assessment and forecasting process.

Current state and tribal port sampling efforts in Westport, La Push and Neah Bay will be expanded to ensure complete coverage of all groundfish fisheries in which rockfish are a component of the catch. This expanded effort will allow for complete sampling of all landings for rockfish species composition and age classes. Species composition and population structure data is used to develop regional estimates of stock productivity and abundance.

Rockfish along the West Coast have been in sharp decline in recent years. In particular, the low abundance of several rockfish species has led to severe management restrictions coast-wide for both commercial and recreational fisheries. However, catch data from Washington fisheries, as well as fishery-independent survey data, indicate that declines in Washington of yelloweye and canary rockfish have not been as severe as those observed off Oregon and California.

Ecosystem-based management requires greater and more accurate data collection on abundance and status of key species such as rockfish. Improving data for yelloweye and canary rockfish would increase understanding and provide a means to better address regional differences in stock productivity and abundance.



A load of mostly shorttraker and rougheye rockfish is unloaded in LaPush. NWIFC: D. Preston

Habitat Mapping

The Ocean Ecosystem Initiative calls for complete sonar mapping and surveying of the seabed off the Olympic coast. Less than 20 percent of this region's seabed has been mapped and surveyed to catalog species and habitat types. Acquiring this data is essential to effectively address groundfish conservation concerns and minimize potential fishery interactions with deep-water coral and sponge species.

Tribes and state resource agencies propose addressing these issues by collaborating on a research plan with the Olympic Coast Marine Sanctuary to assist in completing sonar mapping of the seafloor. This is a necessary first step to determine the abundance and distribution of essential groundfish habitat, as well as identify potential locations of deep-water coral and sponge communities.

Data gathered from these surveys would be compiled in a Geographical Information System database to allow access by all resource management entities. In addition, raw data could be processed to produce maps indicating seabed geology, geological hazards and other attributes.

Recent oceanographic survey cruises have expanded our knowledge of the extent and varieties of deep-water corals, sponges and ocean vents off Washington's coast. Still, resource managers lack a complete picture of the status and abundance of these seafloor habitats. The seafloor survey work and database is essential to manage resources quantitatively and comprehensively – as an ecosystem. This effort would enable state and tribal agencies to address emerging ecosystem management concerns.

Dead Seabirds Are Sign of Coastal Change

The bulbous, orange beak on the dead seabird tells Kenny McCoy, Quinault Indian Nation (QIN) wildlife technician, that he is looking at a dead horned puffin.

McCoy rarely sees puffins during his monthly beach survey of dead seabirds on the southwest Washington coast. “Most of the time we find different species of gulls and cormorants, but we rarely find species like puffins, auklets and murrelets,” he said.

Yet over the past year, McCoy has been finding all of those birds during his surveys for QIN and the Coastal Observation and Seabird Survey Team (COASST).

COASST is a citizen science project of the University of Washington in partnership with Olympic Coast Marine Sanctuary and coastal tribes. The surveys help determine a baseline mortality rate for all seabird species, allowing researchers to determine when unusually high die-offs are occurring.

Because horned puffins stay at sea almost their entire life, finding even a few carcasses on the beach is unusual.

But over the past few years, McCoy and other COASST surveyors have found high numbers of emaciated seabirds on Northwest beaches, creating concern that the birds are not finding enough food.

“We obviously need to dedicate a lot more resources to study events like these because there seems to be a lot of uncertainty among experts about why they are occurring more frequently,” McCoy said.

There are other indications that conditions in the ocean have changed. For example, in 2006, thousands of normally bottom-dwelling fish were found dead on QIN beaches after a low-oxygen dead zone drove them to beach themselves or killed them on the spot.

Most scientific theories about the seabird and fish die-offs center around the idea that major changes are occurring in the ocean currents, possibly related to global warming. These changes can alter food abundance and availability.



Kenny McCoy, wildlife technician for the Quinault Indian Nation, measures and records data from a bird carcass found near Taholah. *NWIFC: D. Preston*

QIN became involved in the COASST program to collect baseline information that could help measure damage to tribal resources in the event of an oil spill. QIN has been collecting the information for its database for nearly 10 years on 20 miles of QIN beaches.

“Unfortunately, the possibility of an oil spill is viewed not as an ‘if,’ but a ‘when,’” said Grover Oakerman, QIN wildlife section manager. Monitoring sea bird mortality can provide an early warning system that is sensitive to changes in the marine ecosystem.

“Marine birds are like the miner’s canary in the coal mine,” said Oakerman. “When the marine ecosystem is disrupted, their mortality rates can abruptly change.”



Quileute tribal habitat technicians Gene Gaddie and Rio Jaimie measure the width of a stream in the Bogachiel River watershed during stream typing for the Timber/Fish/Wildlife agreement. *NWIFC: D. Preston*

Timber/Fish/Wildlife

The 1987 Timber/Fish/Wildlife (TFW) Agreement is one of the United States' oldest and most successful models of collaborative conservation in natural resource management.

TFW brings together treaty Indian tribes, state and federal agencies, environmental groups and private forest landowners in a holistic statewide approach to natural resource management that ensures protection for salmon and wildlife while providing for the economic health of the timber industry.

The ability to fully participate in TFW is absolutely necessary if tribes are to continue to help develop consensus-based solutions for resource management and landowner issues. The 26 federally recognized Indian tribes in Washington that are participating in TFW need stable funding to continue as active partners in the process.

TFW Finds Common Ground

TFW was born when tribes and other stakeholders in Washington's forest resources agreed to find common ground for responsible natural resource management as an alternative to waging costly and lengthy legal battles to resolve their differences. The success of TFW can be attributed to open participation, commitment, trust and partnership on a scale never before seen in natural resource management.

This coordinated approach of multi-governments, agencies, industry and the public has led to greater integration of management responsibilities, which has resulted in more efficient use of limited financial and professional resources.

TFW brings together the collective experiences and expertise of participants in a consensus decision-making process based on the concept of adaptive management. Participants understand and encourage evaluation and modification of the agreement to enhance natural resource protection and improve forest practices. Adaptive management leads to solutions that are politically, legally and technically feasible.

All parties embrace these five goals:

- ◆ Provide the greatest diversity of species and habitats for wildlife on forest lands.
- ◆ Provide long-term protection of habitat productivity for wild fish stocks.
- ◆ Protect the water quality needs of people, fish and wildlife.
- ◆ Inventory, evaluate, preserve, protect and ensure tribal access to traditional cultural and archaeological places in forest lands.
- ◆ Assure sustainable growth and development of the state's forest products industry.

Adaptive Management Works

TFW's adaptive management process begins with data from the scientists, fisheries managers and foresters on the front lines of the forest floor. The information travels through a defined process and schedule to reach the appropriate decision-makers who serve on various TFW committees.

Each TFW committee's function is designed to implement the TFW Agreement and address newly identified issues. All participants then coordinate TFW activities through the Policy Group. Composed of directors of state agencies, policy representatives from federal and tribal governments, landowners and environmental groups, the Policy Group is the TFW board of directors. The Cooperative Monitoring, Evaluation and Research (CMER) Committee is the technical arm of TFW, established to address ongoing scientific questions from the agreement.

The advantages of the TFW approach are threefold:

- ◆ It provides a broad base of participation for all parties, including each tribal government involved in the process.
- ◆ It provides tribal and local governments with flexibility to address regional and political differences.
- ◆ The structure provides efficiency to a non-hierarchical structure that has been developed without an expensive, top-heavy bureaucracy that is slow to react to environmental problems.

All committees work toward consensus decisions. They may also agree to disagree. Some issues require research and monitoring or further discussions, but this does not stall the process.

TFW holds decision-makers accountable, to ensure protection of our natural resources. Once a recommendation or option for an issue is developed, it moves up the TFW organizational structure for adoption as a policy, procedure or proposed regulation. These decisions are made with an eye toward a long-range plan that stabilizes both the timber industry and our natural resources.

TFW implementation requires the continued participation and commitment of all the stakeholders, as well as the continued support of the legislative and executive branches of state government.

TFW Continues to Evolve

The listings of several western Washington salmon stocks under the federal Endangered Species Act (ESA), changes in the federal Clean Water Act to the requirements for polluted runoff, and concern about the continued economic viability of the timber industry brought TFW participants together in November 1996. Federal and local governments joined the tribes, state government, the timber industry and environmental groups to develop the Forests and Fish Report (FFR) for management of state-regulated forest lands.

Adopted by the state Legislature in 1999, the Forests and Fish Report is based on four goals:

- ◆ Provide compliance with the ESA for aquatic and riparian-dependent species on non-federal forest lands.
- ◆ Restore and maintain riparian habitat on non-federal forest lands to support a harvestable supply of fish.
- ◆ Meet the requirements of the federal Clean Water Act for water quality on non-federal forest lands.
- ◆ Maintain the economic viability of the timber industry in the state of Washington.

FFR partners recently received approval for a 50-year Habitat Conservation Plan (HCP) that will ensure timber harvest for forest landowners and protection of forest ecosystems and threatened species. The HCP developed through FFR covers 60,000 miles of streams on 9.3 million acres of forestlands that are home to ESA-listed species.

Adaptive management will guide implementation of the HCP, systematically improving management through evaluation and monitoring to determine if changes are needed. To be effective, however, all of those affected by the HCP must be full partners in its implementation.

Importance of Effective Tribal Participation

TFW's adaptive management approach requires long-term research and monitoring that are best served by a diverse range of skills, such as forestry, fisheries biology, hydrology, geology and quantitative science. It also requires the ability to look at the landscape on a scale that is sensitive to the range of ecosystems throughout the state.

Tribes are uniquely equipped to implement this adaptive management effort because of their commitment to the resource and knowledge of their watersheds. Tribes need a long-term, stable funding base to ensure the process is guided by the best available scientific information. Tribal participation in TFW also helps the federal government fulfill its treaty trust obligations to the tribes.

While all parties committed to this historic effort are important, the effort would quickly collapse without tribal participation. Tribal participation brings stability and integrity by:

- ◆ Minimizing risk for conflict in the forested landscape. Cooperative relationships between tribes and landowners provide a platform for commitment to collaborative problem solving. Without tribal engagement, that assurance of cooperation disappears and contentious legal alternatives become likely pathways as tribes work to protect their treaty-reserved right to fish.

- ◆ Providing a presence in every watershed. Tribal homelands, traditional fishing and hunting areas, and reservations can be found in every major watershed throughout the state. The tribes' history, familiarity and continued use of each watershed provide focused expertise and support.

- ◆ Engaging tribal leadership to share the experience and credibility derived from decades of involvement with natural resource issues locally and nationally.

- ◆ Providing scientific expertise regarding fish distribution, habitat function and management, data management and delivery, watershed management and monitoring.

The Northwest Indian Fisheries Commission (NWIFC) acts as a central clearinghouse and facilitator for tribes participating in TFW. The NWIFC provides an organizational base to deal with in-common issues and needs for the tribes.

The tribes and the NWIFC then coordinate with other TFW participants, including the state departments of Natural Resources, Ecology, Fish and Wildlife, and Labor and Industries; U.S. Forest Service; Washington Environmental Council; National Audubon Society; private forest landowners; and county and state governments.

Tribes participating in TFW include: Chehalis, Colville, Hoh, Jamestown S'Klallam, Kalispel, Lower Elwha Klallam, Lummi, Makah, Muckleshoot, Nisqually, Nooksack, Port Gamble S'Klallam, Puyallup, Quileute, Quinault, Sauk-Suiattle, Shoalwater Bay, Skokomish, Spokane, Squaxin Island, Stillaguamish, Suquamish, Swinomish, Tulalip, Upper Skagit and Yakima. Tribal organizations participating in TFW include the NWIFC, Upper Columbia United Tribes and Skagit River System Cooperative.

TFW works because it provides:

- ◆ Partnerships versus costly adversarial relationships;

- ◆ Economic benefits from a healthy timber industry, as well as taxpayer benefits from stakeholder cooperation and resulting economy of scale; and

- ◆ Assistance with implementation of the federal Endangered Species Act and possible prevention of future listings across the state.

Tribal governments were key participants in the development of TFW and its common goals. Those goals remain clear as tribes work for healthy salmon habitat while supporting an economically viable timber industry.

Crews Evaluate Streamside Buffers



CMER riparian ecologist Ash Roorbach measures the circumference of a tree in South Sound. *NWIFC: T. Meyer*

Armed with tape measures, compasses, wooden stakes and chalk, field crews have been hitting the working forests in western Washington to evaluate the effectiveness of streamside buffers used to minimize impacts of timber harvests on non-fish-bearing streams.

This work is part of a project sponsored by the Cooperative Monitoring, Evaluation and Research (CMER) committee through the Forest and Fish Report (FFR) adaptive management program. The NWIFC houses scientists who provide staff support to the CMER research effort and oversee this, and other, research projects.

Increased protection of small headwater feeder streams is an important element in the FFR strategy to protect downstream water quality and fish habitat as well as stream-associated amphibian species.

Headwater streams are a critical link that connects the upslope areas managed for timber production with downstream fish habitat. They act as a conduit transporting stream flow, wood, sediment, nutrients and invertebrates to larger streams inhabited by fish. Functioning streamside buffers provide shade to help keep water temperatures low, which is important to salmon.

Following the implementation of the FFR agreement in 2000, non-fish-bearing streams in western Washington for the first time received buffers that extend 50 feet in both directions over approximately 50 percent of their length. The idea is to place buffers in sensitive areas where they will provide the greatest benefit for fish and wildlife, while allowing flexibility for landowners to harvest timber and haul logs out to landings.

Since the buffer prescription for non-fish-bearing streams is new and untested, CMER is sponsoring several studies to help determine how well the buffers protect fish, amphibians and water quality over time. Removal of trees near streams during timber harvest may reduce shade levels, increase sediment input and affect the recruitment of large woody debris to the stream channel. Following a timber harvest, the strip of trees that remain in a stream buffer must adjust to exposure to sun and wind. They are especially vulnerable to being toppled over by strong winds after a heavy rain saturates the soil.

Shade helps keep water temperatures from reaching 70 degrees – a lethal temperature for salmon. Logs and other woody debris falling into streams help create diverse habitat that is important to salmon. Returning adult salmon rest in pools created by the debris, while young salmon find hiding places to avoid predators.

Coordinated Tribal Water Resources Program

The treaty Indian tribes in western Washington partnered with the federal Environmental Protection Agency (EPA) 17 years ago to create and implement a nationwide model of cooperation and creativity in addressing water quality issues under the Clean Water Act.

Today, building on the success of that initiative, these same tribes are embarking on a new partnership with the U.S. Geological Survey (USGS) to expand the Coordinated Tribal Water Quality Program into a Coordinated Tribal Water Resources Program.

While much has been accomplished in the area of water quality, the treaty Indian tribes and the Northwest Indian Fisheries Commission (NWIFC) have identified the need for a comprehensive assessment of water resources in western Washington as the basis for the informed management of those resources.

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.

Judicious management of water resources and protection of tribal rights requires information about the quantity and quality of water available in western Washington. The assessment will produce scientific information on water resources that could be used to support a variety of tribal water resource management, administrative and legal activities, including:

- ◆ Establishing instream flows to sustain viable and harvestable populations of fish.
- ◆ Identifying limiting factors for salmon recovery.
- ◆ Protecting existing ground and surface water supplies.
- ◆ Reviewing and evaluating administrative decisions, such as proposed water permits and instream flows, and project proposals on- and off-reservation.
- ◆ Participating in federal, state and local planning processes for water quantity and water quality management.



Elsie Raymond, a water quality technician for the Puyallup Tribe of Indians, takes water quality measurements in Clarks Creek. NWIFC: E. O'Connell

USGS Partnership

The treaty Indian tribes in western Washington are partnering with the USGS to develop a cooperative scientific framework for a comprehensive assessment of water resources in western Washington. The assessment will support tribal water resources management by evaluating water availability, out-of-stream uses of water by tribal and non-tribal parties, and water requirements for ecosystems in western Washington.

As a federal agency within the Interior Department, USGS has a trust responsibility to tribal governments. It also is the pre-eminent authority among governments for water resources, providing valuable expertise, oversight and guidance to the tribal effort.

Since the 19th century, water resources in western Washington have been the subject of extensive scientific investigation by tribal, federal, state and local government agencies, public utilities and private interests. Despite this recent history of investigations, data collected through these efforts are not readily available for current management activities. Many of the investigations were motivated by a specific local concern, such as locating a dam to generate hydroelectricity, determining in-stream flows for a specific reach of a river, or assessing water use for a municipality.

Although some investigations have integrated information about the availability and use of water sources for specific basins or sub-basins, this data has not been comprehensively compiled for western Washington. A tribal water resources assessment will collect available information on the region's water sources, quality and uses. Existing and new information systems will be used to make the information readily available to tribal water resources managers.

In addition to providing a comprehensive perspective on water resources in western Washington, the assessment will identify information gaps and approaches for filling them. A primary objective of the assessment will be to identify where additional monitoring, surveys or focused studies are needed.

The tribes have shown, through their work with EPA in the Coordinated Tribal Water Quality Program, that a strong working relationship can be developed with USGS. The tribal/EPA effort has improved relationships, thereby enhancing the success of ecosystem management.

Additionally, the tribal/EPA model program has produced transferable tools that can be shared with tribes throughout the nation. These tools include:

- ◆ Routine coordination and networking among tribes, state agencies and EPA;
- ◆ A coordinated tribal water quality database design and structure;
- ◆ A tribal water quality standards template;
- ◆ A Coordinated Tribal Water Quality Program design manual; and
- ◆ A cooperative state/tribal 303(d) strategy.

Much of this cooperative approach and work can be utilized in the water assessment effort. A unified tribal commitment and call for data will be the foundation of collecting and compiling the most important assessment of this region's water resources ever developed.

By embarking on this effort, tribes and the USGS are initiating a shift in the region's water discussions from one of speculation and politics to one of substance and purpose. Successful completion could support meaningful dialogue addressing flow setting, water conservation and growth.

Water Quality Case Study

Mushrooms Could Improve Water Quality

Cleaning up water pollution could be as easy as growing oyster mushrooms in your backyard.

In a partnership with the Jamestown S’Klallam Tribe, the Battelle Pacific Northwest National Laboratories has cultivated fungus and native plants along a Sequim stream to see whether it will help prevent the movement of bacteria from upland sources into coastal waters.

“If using this mushroom technique works, it would be very cost-effective for removing fecal coliform and excess nutrients from the water,” said Hansi Hals, the tribe’s environmental planning and program coordinator.

Keeping Sequim Bay and the rest of the Dungeness watershed clean is important for the tribe, Hals said, because it is the tribe’s primary area for harvesting its treaty-reserved natural resources, such as shellfish and salmon. Harvesting in Sequim Bay has been closed for the past few years because of the high pollution levels.

In 2006, tribal and Battelle staff constructed a biofiltration garden in the path of a small stream that flows through pasture land. Thirty species of native plants and a mulch of woodchips were installed in half of the garden. In the other side, the same native plants and woodchips were added, plus several types of fungi, including oyster mushrooms and stropharia.

As fungus grows in soil, it breaks down and digests organic materials, such as dead wood and garden waste, and in the process, breaks down contaminants in the soil as well. Some species are also natural predators of bacteria. They actively destroy bacteria such as fecal coliform that can otherwise contaminate water, said Susan Thomas, a senior research scientist with Battelle. The laboratory has succeeded before with similar work.

The creek is split into two small channels at the site, each flowing through a pond and emptying into a coastal wetland. Water samples are collected monthly and tested for bacteria to determine how well pollutants are filtered from the water.



Hansi Hals (left) of Jamestown S’Klallam Tribe and Dana Woodruff of Battelle Laboratories observe mushrooms in a stream on a Sequim farm. *NWIFC: T. Royal*

The study was completed in January 2008. Funding for this project came from the U.S. Environmental Protection Agency (EPA), as part of the tribe’s EPA Targeted Watershed Grant. The projects from the grant focus on water quality improvements in the Dungeness watershed, with emphasis on shellfish health in Dungeness Bay.

Tribal Salmon Management

Indian tribes have always lived in every major watershed in what is now the state of Washington. From time immemorial, tribal cultures, spirituality and economies have centered on fishing, hunting and gathering natural resources in the region.

As a sovereign government, each tribe regulates and coordinates its own fishery management program within its usual and accustomed fishing area. Tribal management jurisdiction includes six species of salmon: chinook, coho, chum, pink, sockeye and steelhead. Tribes conduct fisheries off the Washington coast, in coastal rivers and bays, and throughout the inland waters of Puget Sound and its tributaries.

A tribe's salmon management program typically includes a manager who oversees staff working in the areas of harvest management, enhancement and habitat. The fishery manager develops fishery plans and run size forecasts, assesses spawning escapement needs and monitors stock status, among other duties.

Each tribe or tribal natural resource management cooperative maintains enforcement programs to ensure that fishing regulations are observed. Enforcement officers work with state and federal enforcement personnel to protect the resource. Violations of tribal fishing laws are prosecuted in tribal courts.

Restoring all wild salmon populations to self-sustaining levels that can support harvest is the primary salmon management goal of the treaty Indian tribes.



Dean Jackson, Quileute tribal fisheries technician, removes a Sol Duc River chinook for the tribe's broodstock program in which eggs from wild chinook are reared in a hatchery to supplement the wild run and improve returns.

NWIFC: D. Preston

Integrating Harvest, Hatcheries and Habitat

Integration of the three H's (harvest, hatcheries and habitat) is the key to salmon management and the focus of the treaty Indian tribes in western Washington. That means that all three of these key aspects of salmon management must work together:

- ◆ Harvest management must be conservative, protecting weak wild stocks while allowing appropriate harvest of healthy, primarily hatchery-raised salmon.

- ◆ Hatchery practices must protect the genetic integrity and survival of wild salmon stocks while also producing salmon for harvest.

- ◆ Habitat quality and quantity – the primary limiting factors for wild salmon productivity – must be improved to take advantage of gains realized from advancements in harvest and hatchery practices.

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. This overall reduction in salmon harvest has come at great cost to the spiritual, cultural and economic well-being of the treaty Indian tribes. Reducing harvest alone, however, can not compensate for the ongoing decline in natural wild salmon production caused by lost and degraded salmon habitat.

Together, more than 100 tribal, state and federal hatcheries in western Washington comprise the largest hatchery system in the world, producing nearly three-fourths of all the salmon harvested in Puget Sound and playing a critical role in meeting treaty tribal harvest obligations. Through hatchery reform efforts now under way, the treaty tribes and state of Washington are drawing upon state-of-the-art science to minimize the impacts of artificial propagation on wild salmon.

Tribal governments have made strides to protect salmon habitat, both on their reservations through land-use and water resource authorities and off-reservation by collaborating with non-Indian neighbors to protect and restore watersheds that support salmon. Extensive habitat protection and restoration throughout the region is beyond the power of the tribes alone to implement. Only through concerted federal, state, tribal, local and private efforts can it be achieved.

Collaborative Conservation

The needs of salmon, like all natural resources, are myriad and complex, crossing many watersheds, legal jurisdictions and political boundaries. No resource can be managed individually because each is connected to the other.

The tribes know that cooperation is the key to successful natural resource management. Through a spirit of collaborative conservation that has prevailed in the region since the early 1980s, the tribes work with state, federal and local governments, conservation groups, industry and others on comprehensive efforts to return all wild salmon populations to self-sustaining levels.

Pacific Coastal Salmon Recovery

The Pacific Coastal Salmon Recovery Fund (PCSRF) was established by Congress in Fiscal Year 2000 to aid the conservation, restoration and sustainability of Pacific salmon and their habitats. Congressional appropriations have been made to Pacific coast and Columbia River Indian tribes, as well as the states of Oregon, Washington, Idaho and Alaska, to aid recovery of weak wild salmon stocks and leverage additional funding and volunteer participation by local and private entities.

PCSRF funding supplements extremely limited tribal resources for salmon recovery efforts. To make each federal funding dollar work to its fullest, tribes leverage PCSRF monies through partnerships with other tribes, local governments, watershed councils, conservation organizations and others.

PCSRF projects are making significant contributions to the recovery of wild salmon throughout the region. Since the program's inception, Pacific coastal tribes have used PCSRF monies to:

- ◆ Remove 198 fish passage barriers, opening 304 stream miles through culvert removal and 579 stream miles through other barrier removal.
- ◆ Restore 148 miles of instream habitat.
- ◆ Restore 10,935 acres of upland habitat.
- ◆ Reduce impacts from 281 miles of road.
- ◆ Restore 170 stream miles and 2,310 acres of streamside habitat.
- ◆ Restore 297 acres and create 44 acres of wetland habitat.
- ◆ Restore 2,587 acres and create 1,579 acres of estuarine habitat.
- ◆ Treat 1,096 acres of estuarine habitat for invasive species.
- ◆ Protect 14,828 acres and 164 stream miles through land acquisition, easement or lease.

Salmon Harvest Management



Nugie Kautz, a Nisqually tribal fisherman, throws an adult salmon into a tote during the fall chinook fishery on the Nisqually River.

NWIFC: E. O'Connell

Harvest management must be responsive to the conservation needs of the salmon resource, protecting weak wild stocks while allowing appropriate harvest of healthy, mostly hatchery-raised salmon.

Salmon runs and fisheries in Puget Sound, the Strait of Juan de Fuca and nearshore coastal waters are co-managed by the treaty Indian tribes and Washington Department of Fish and Wildlife (WDFW). Tribal and state managers work cooperatively, through the Pacific Fishery Management Council (PFMC) and the North of Falcon process (NOF), to develop fishing seasons that protect the weakest salmon stocks. The PFMC is a public forum established by the federal government that is charged with creating a comprehensive fisheries plan for ocean fishing, incorporating the varied interests of tribal, state and federal managers and commercial, sport fishing and environmental groups.

While the PFMC is planning coastwide ocean fisheries, treaty tribes and the states of Oregon and Washington in the NOF process are outlining their inshore and coastal fisheries. The North of Falcon process is so named because it deals with fisheries from north of Cape Falcon, Ore., to the border between the United States and Canada. Through NOF, tribal and state biologists forecast expected salmon returns to specific areas.

Population estimates are based on biological data collected during salmon out-migration, along with habitat information and weather conditions that affect salmon populations. The number of fish available to harvest, determined by the co-managers, is what's left after escapement needs are met. Escapement is the number of fish needed to spawn and sustain a run at a desired level.

The following are several examples of how harvest is co-managed by the tribes, the state of Washington and federal government.

U.S./Canada Pacific Salmon Treaty

Adult salmon returning to most western Washington streams migrate through both U.S. and Canadian waters, and are harvested by fishermen from both countries. For decades, there were no restrictions on the interception of returning salmon by fishermen of neighboring countries.

In 1985, after two decades of discussions, the Pacific Salmon Treaty (PST) was created through the cooperative efforts of the tribes, state governments, U.S. and Canadian governments, and sport and commercial fishing interests. The Pacific Salmon Commission (PSC) was created by the United States and Canada to implement the treaty, which was updated in 1999.

The PSC establishes fishery regimes, develops management recommendations, assesses each country's performance and compliance with the treaty, and is the countries' forum to reach agreement on mutual fisheries issues.

An eight-member bilateral body that includes representatives from tribal, state and federal governments governs the PSC. Four regional panels composed of fisheries managers and industry representatives advise the PSC on policy matters.

As co-managers of the fishery resources in western Washington, the tribes' participation in implementing the PST is critical to achieve the goals of the treaty to protect, share and restore salmon resources. In addition to serving at the policy level on the PSC and its panels, tribal representatives participate on the many committees and work groups that provide technical support to implement the treaty.

Puget Sound Chinook Harvest Management Plan

The Puget Sound Chinook Recovery Plan addresses all aspects of the decline of Endangered Species Act-listed wild Puget Sound chinook, and includes a harvest management plan to aid recovery. The harvest plan, developed by the co-managers, has been approved by NOAA Fisheries, the federal agency in charge of implementing the ESA.

The Chinook Harvest Plan is intended to ensure that fishery-related mortality will not harm rebuilding efforts of natural Puget Sound chinook salmon populations. The fundamental intent 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 harvest management plan outlines objectives that will guide the Washington co-managers in planning annual harvest regimes until 2009. While the plan guides the implementation of fisheries in Washington that are under the co-managers' jurisdiction, it also considers the total harvest impacts of all fisheries, including those in Alaska and British Columbia, to ensure that conservation objectives for Puget Sound are achieved.

Tribal hatcheries also must comply with federal ESA requirements to ensure that their management practices do not harm listed salmon.

ESA compliance work extends to non-salmon species as well. For example, tribes must conduct extensive reviews to ensure that their fisheries management programs do not harm recently listed Puget Sound orcas or damage critical habitat that has been set aside for their needs. Meanwhile, ESA listings continue to increase in the region. Puget Sound steelhead recently was added to the list. In response, the tribes and the state are creating a joint steelhead management plan.

Treaty Indian Fishery Catch Monitoring Program

One of the keys to salmon harvest management in western Washington is the treaty Indian Fishery Catch Monitoring Program (TICMP), managed by the Northwest Indian Fisheries Commission.

The TICMP provides accurate catch statistics for the treaty Indian fisheries in the *U.S. v Washington* case area. Using procedures developed cooperatively with the WDFW, the catches of all salmon, shellfish and marine fish by treaty Indian fishers are entered into an electronic database. This allows a single set of data accepted by both the tribes and state of Washington to be maintained as the historical database for use in the management of Puget Sound and coastal Washington fisheries. This program also provides the NWIFC member tribes the ability to access both treaty and non-treaty summary catch data for Puget Sound and coastal Washington fisheries over the Internet, using an online database system developed and maintained by the NWIFC.

All state and tribal licensed fish dealer/buyers are issued numbered fish tickets by WDFW and are required by law to fill out a ticket for each landing. When treaty fishers sell their catches, their identification number is included on a ticket that records the number, weight, species and location of harvest. Once the catch data have been recorded, that data is reviewed by the tribe, edited and entered into the database where it is incorporated into the record of final catch statistics. More than 50,000 fish tickets are processed annually by tribes and the NWIFC.

The Treaty Indian Catch Monitoring Program is an important tool used in salmon co-management. Because the data is shared on a same-day basis, the program enables harvest levels to be monitored closely and in real-time. The program also ensures the 50-50 sharing formula between the tribes and state is upheld. In addition, historical catch data is used to develop annual abundance forecasts and evaluate and manage fisheries through computer models.

Nisqually Restricts Fisheries to Benefit Chinook



Emiliano Perez, a fisheries technician for the Nisqually Tribe, hoists two salmon which are being scanned for coded-wire tags.

NWIFC: E. O'Connell

For the second year in a row the Nisqually Tribe has cut its chinook fishery, closing it by nearly a month to increase the number of naturally spawning salmon in the Nisqually River watershed. This move comes despite robust runs of hatchery chinook returning to the Nisqually River for the last two years.

“This is a conscious choice by the tribe to contribute to the recovery of these fish,” said Georgianna Kautz, natural resources manager for the tribe. Tribal and state co-managers expected a run of more than 37,000 chinook.

All hatchery chinook caught on the Nisqually River were produced at one of the tribe’s two hatcheries on Clear and Kalama creeks. Last year, the tribe released nearly 4 million young hatchery chinook. Naturally spawning Nisqually chinook are listed as “threatened” under the federal Endangered Species Act.

Even though the tribal and state co-managers have consistently met chinook spawning goals on the Nisqually for the past five years, they want to put even more chinook on the spawning grounds to further build the run. In the last few years, more than 3,000 chinook have spawned annually in the Nisqually. A decade ago only 400 chinook spawned in the watershed.

Changes in the fishery complement chinook habitat restoration and protection efforts throughout the entire Nisqually watershed. “While we’re expanding salmon habitat throughout the watershed, we want to make sure that every bit of this newly available habitat is used by spawning and rearing salmon,” said David Troutt, natural resources director for the tribe.

“From restricting fisheries to restoring important salmon habitat, the Nisqually Tribe is doing its part to recover Nisqually chinook,” Kautz said. “This year’s return is looking good, but we have a lot of work to do before we really recover Nisqually River chinook.”

Salmon Hatchery Management

The first salmon hatcheries in the state of Washington were built more than 100 years ago, largely to compensate for the lost natural salmon production caused by damaged and disappearing habitat.

Today, more than 100 hatcheries are operated in Puget Sound and coastal Washington by the treaty tribes, Washington Department of Fish and Wildlife and U.S. Fish and Wildlife Service (FWS), making up the largest hatchery system in the world. More than 41 million salmon were released from tribal hatcheries alone in 2006.

Hatchery salmon are needed to meet treaty tribal harvest obligations because many wild salmon populations are severely depressed. Without hatcheries, there would be almost no salmon harvest at all in western Washington.

Hatcheries are helping to recover what were once thriving salmon populations. Some hatcheries support wild runs through broodstock programs in which native fish are captured and spawned, their progeny released to help bolster naturally spawning salmon runs. Tribal hatcheries support the tribes' treaty-reserved rights to fish, and provide additional fish for harvest by non-Indian fishermen.

Hatchery Reform

In 2000, Congress created the Puget Sound and Coastal Washington Hatchery Reform Project – a systematic, science-based examination of how hatcheries can help recover and conserve salmon populations while supporting sustainable fisheries.

Hatchery Reform addresses concerns about possible impacts of hatchery operations on several Puget Sound and coastal salmon stocks listed as “threatened” under the federal Endangered Species Act.

Hatcheries are not meant to replace healthy spawning and rearing habitat, but to be an extension of it, like a productive river tributary. Together with ongoing habitat restoration efforts and strict harvest regulations, Hatchery Reform is a fundamental part of efforts to recover wild salmon and sustain fisheries in Washington.



Chinook are released into the Sol Duc River through the Quileute Tribe's broodstock program where some summer chinook are captured, their eggs reared in a hatchery and the young fish released. *NWIFC: D. Preston*

An independent science panel, the Hatchery Scientific Review Group (HSRG), was developed to evaluate tribal, state and federal hatchery programs and their goals. The scientific evaluation resulted in more than 1,000 recommendations for changes at individual hatcheries and 18 recommendations for changes across the entire western Washington hatchery system.

The HSRG recommended that:

- ◆ Goals for all salmon stocks must be quantified to show how they are valuable in their own community, such as through harvest, conservation, education and research.
- ◆ The purpose, operation and management of each hatchery program must be scientifically defensible and consistent with current best available scientific knowledge.
- ◆ Decisions must be informed and modified through an adaptive management approach that continuously evaluates those decisions as new scientific information becomes available.

Hatchery Reform represents the modernization of hatchery management for which the tribes have been striving. Tribes are implementing Hatchery Reform projects as resources become available.

Hatchery Rehabilitation and Maintenance

Some of the HSRG's recommendations included making capital improvements to tribal hatchery facilities. However, most of those badly needed improvements are beyond the tribes' financial reach. While tribal facilities in western Washington have been rearing and releasing fish for three decades, these hatcheries have been rapidly deteriorating because there has been little federal funding available for maintenance and rehabilitation.

Most tribal hatcheries operating today were built with the aid of federal funding when the tribes started their fisheries programs in the 1970s following the Boldt decision, which reaffirmed the tribes' treaty-protected right to 50 percent of the harvestable fish. However, federal funding has not kept pace with the ongoing maintenance and rehabilitation needs for these 30-year-old facilities. The funding shortfall threatens not only the ability of the tribes to implement much-needed hatchery reform projects to help protect wild salmon stocks, but also the tribe's basic ability to produce hatchery salmon for harvest.

Tribal hatcheries need consistent funding to ensure facilities are safe, effective and operating with the best management practices. Funds also are needed to ensure that tribal hatchery operations are biologically compatible with regional salmon recovery efforts and are in compliance with the latest regulatory and legislative mandates.

Third party litigation is possible if tribal hatcheries are unable to meet standards for ESA-listed wild salmon in western Washington. If tribes are forced to close their hatcheries, all sport and commercial fisheries would be closed. Such closures would also breach the federal government's trust responsibility to the tribes. The federal government, through the Bureau of Indian Affairs, has a responsibility to maintain these facilities in good operational condition to ensure compliance with ESA mandates and Hatchery Reform recommendations.

Fish Health, Genetics

The member tribes of the Northwest Indian Fisheries Commission created the Tribal Fish Health Program (TFHP) in 1988 to meet the needs of their salmon enhancement and supplementation programs. The program's goal is to assist tribes in rearing and releasing healthy fish that will help sustain tribal fisheries and restore wild populations.

The TFHP conducts a health-monitoring program designed to maintain the health of the fish while they are in the hatchery and to identify and correct problems before they occur. NWIFC pathologists conduct monthly health exams on fish stocks at each tribal hatchery from the time the adults return to spawn until the time their progeny are released from the hatchery.

NWIFC geneticists work with tribal hatchery programs through the Hatchery Reform effort to ensure protection of wild salmon genes and maintain the genetic health of hatchery-produced salmon.

Mass Marking and Coded-wire Tagging

Congress mandated in 2003 that all salmon released from federally funded hatcheries be marked so that they could be identified for conservation purposes. In response, the tribes developed an extensive program to "mass mark" their hatchery production.

Hatchery salmon are mass marked by having their fleshy adipose fin removed. Mass marking enables certain sport fisheries to be mark selective because anglers can distinguish between abundant fin-clipped hatchery salmon and their wild counterparts. Wild fish are released after being hooked, although some die as a result of the trauma. Mass marking also provides additional tools for evaluating and managing hatchery programs.

The treaty tribes also operate an extensive, research-based coded-wire tag program. Tags inserted into the noses of young salmon provide information for fishery and stock assessment and analysis. When coded-wire tagged salmon are sampled as adults, tag data provides important information about survival rates, migration patterns, harvest rates and hatchery effectiveness. Fish from many tribal facilities are tagged as "indicator stocks" that facilitate management and help monitor rebuilding efforts under the Pacific Salmon Treaty between the United States and Canada.

The tribes' NWIFC operates four specially designed trailers to mass mark and tag hatchery coho, chinook and steelhead. The tribes annually mass mark more than 5.5 million fish and insert coded-wire tags in nearly 4 million fish. Millions more are mass marked by the state, FWS and the Canadian government.

Hatchery Management Case Study

Rescuing South Fork Nooksack River Chinook

Sixteen yearling salmon in an aquarium at the state's Kendall Creek Hatchery could be the salvation of South Fork Nooksack River chinook.

The Lummi Nation and Nooksack Tribe, working with the state Department of Fish and Wildlife and National Oceanic and Atmospheric Administration, have developed a plan to rescue the population, which is at risk of becoming extinct.

South Fork native chinook enter the river in May and June and spawn during August and September. These early-timed chinook supported tribal ceremonial and subsistence fisheries during the spring months when there were no other salmon in the Nooksack. When returns of early chinook declined in the 1970s, the tribes closed the river fishery during the spring months, but the population failed to rebound.

“Recovery needs immediate, intensive hatchery intervention, because abundances are low and habitat conditions are degraded,” said Bob Kelly, policy director for the Nooksack Tribe.

Capturing adult South Fork chinook to use for hatchery broodstock was a challenge. Lummi crews collected 38 adults in the South Fork, but after DNA analysis, only four were found to be true South Fork chinook and provided a few hundred eggs.

To make up for the unsuccessful broodstock collection, field crews scoured the South Fork for juveniles readying to migrate to sea. About 100 juveniles were taken to the tribe's Skookum Creek Hatchery for genetic analysis. Sixteen juveniles were identified as South Fork natives and were transferred to the Kendall Creek Hatchery where they will grow to maturity.

These fish will not be returned to the wild. Once mature, they will be transferred back to Skookum Creek Hatchery to produce a new generation that will then be released in the wild to spawn naturally.



A wild-caught juvenile South Fork Nooksack River chinook salmon adjusts to its new home, in an aquarium at the state's Kendall Creek Hatchery. *NWIFC: K. Neumeyer*

Recovery of the South Fork early chinook population is a top priority for the Nooksack basin. Historically, there may have been as many as 13,000 early-timed South Fork chinook, but the population estimate for 2006 was 64 individuals. The interim recovery goal for Nooksack early-timed chinook is 2,000 natural origin spawners.

“The partners in the recovery plan decided that extreme action was required to save the unique genetic characteristics of the South Fork chinook,” said Merle Jefferson, director of the Lummi Natural Resources Department. “The captive brood program is required to ensure that there are sufficient adults for the supplementation program in the future. Recovery will take decades.”

Salmon Habitat Restoration

Conservative harvest practices and reforming hatchery practices aren't enough to sustain healthy salmon populations. Habitat quality and quantity – the primary limiting factors for wild salmon productivity – must be improved to take advantage of advances in harvest and hatchery practices.

Salmon habitat has been steadily lost and degraded for the past 150 years as the non-Indian population in western Washington has exploded. Forests have been cleared, dams built and roads cover the region. As the habitat goes, so go the salmon.

The treaty Indian tribes are working hard to restore some of that lost habitat. Tribes are collaborating with property owners with salmon-bearing streams on their land. Engineered log-jams and other woody debris are being added to streams to slow flows and create cool pools of water in which salmon rest and feed. Tribes also conduct extensive water quality monitoring efforts to check for pollution and to ensure that other factors, such as dissolved oxygen levels, are adequate for salmon and other fish.

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

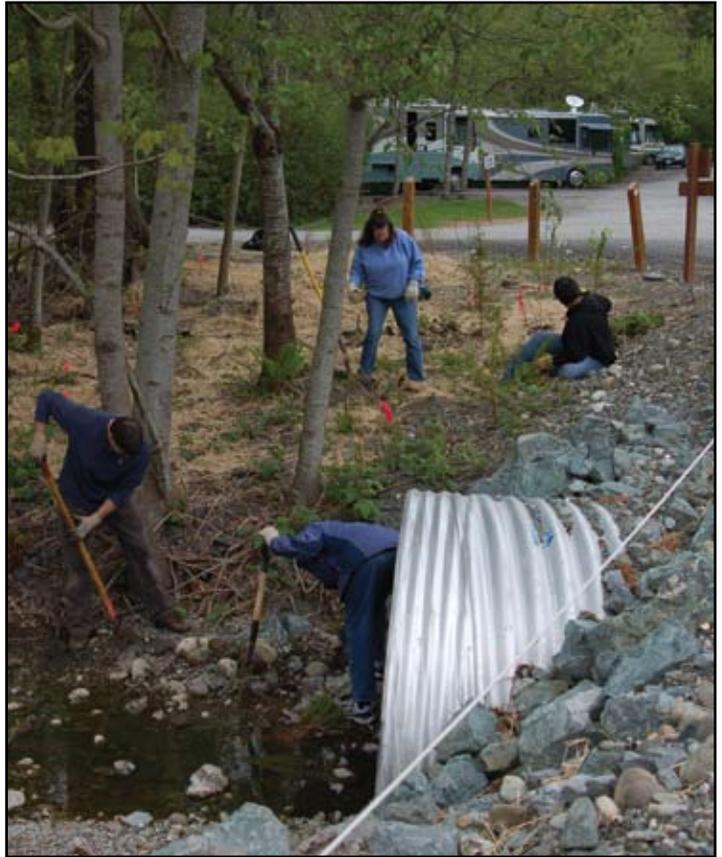
One such effort is the Timber/Fish/Wildlife Forests and Fish Report (Page 10), through which forest practices are cooperatively managed to ensure protection for salmon, while also ensuring the health of the timber industry.

Salmon and Steelhead Habitat Inventory and Assessment Program

Another joint effort of the treaty tribes and state of Washington is the Salmon and Steelhead Habitat Inventory and Assessment Program (SSHIAP). Formed in 1995, SSHIAP produced the “State of Our Watersheds Report” – a comprehensive account of the health of the region’s salmon habitat that is helping to provide a blueprint for salmon recovery.

SSHIAP is a long-term data system which utilizes scientifically sound data to provide a unique platform for tracking trends in freshwater and estuarine salmon habitat conditions.

A key feature of SSHIAP is that it quantitatively characterizes habitat conditions linked with stock distribution. This partnership-based information system is designed for local-, watershed-, basin-, and regional-scale habitat analyses to focus salmon protection and restoration efforts, and to track trends in habitat over time. It relies on information derived from 1:24,000-scale maps and Geographical Information System (GIS) coverages, aerial photographs, field surveys, existing databases, historical records, and the expertise of tribal, state and other biologists.



Volunteers clear invasive weeds from Lone Tree Creek during an Earth Day event on the Swinomish Reservation. NWIFC: K. Neumeyer

GIS increases the ability of SSHIAP to integrate and analyze habitat information acquired from a wide variety of sources. SSHIAP is intended to be a “living” database.

The SSHIAP program is providing a blueprint for joint tribal/state action to define a cooperative process to implement habitat and restoration strategies by:

- ◆ Documenting and quantifying past and current habitat conditions.
- ◆ Providing a consistent framework for data analysis.
- ◆ Assessing the role of habitat loss and degradation on the condition of salmon and steelhead stocks.
- ◆ Assisting in the development of stock- or watershed-specific strategies for habitat protection and restoration.

Habitat Management Case Study

Dike Removal Restores Skokomish Tidelands

Huge earth-moving machines on the Skokomish tidelands on a September 2007 morning seemed out of place for an estuary restoration project.

By using the machines to remove a mile-long 60-year-old earthen dike, the Skokomish Tribe expected to restore natural fish habitat to a 108-acre parcel – with islands of sediment that flood during tidal surges.

During that afternoon’s high tide, the tidelands got exactly that as the saltwater of Hood Canal quickly flooded areas that hadn’t seen tidal energy in decades.

This phase of the project removed 5,000 linear feet of dikes to restore the Skokomish River’s estuary west of the river’s mouth, within the tribe’s reservation boundaries.

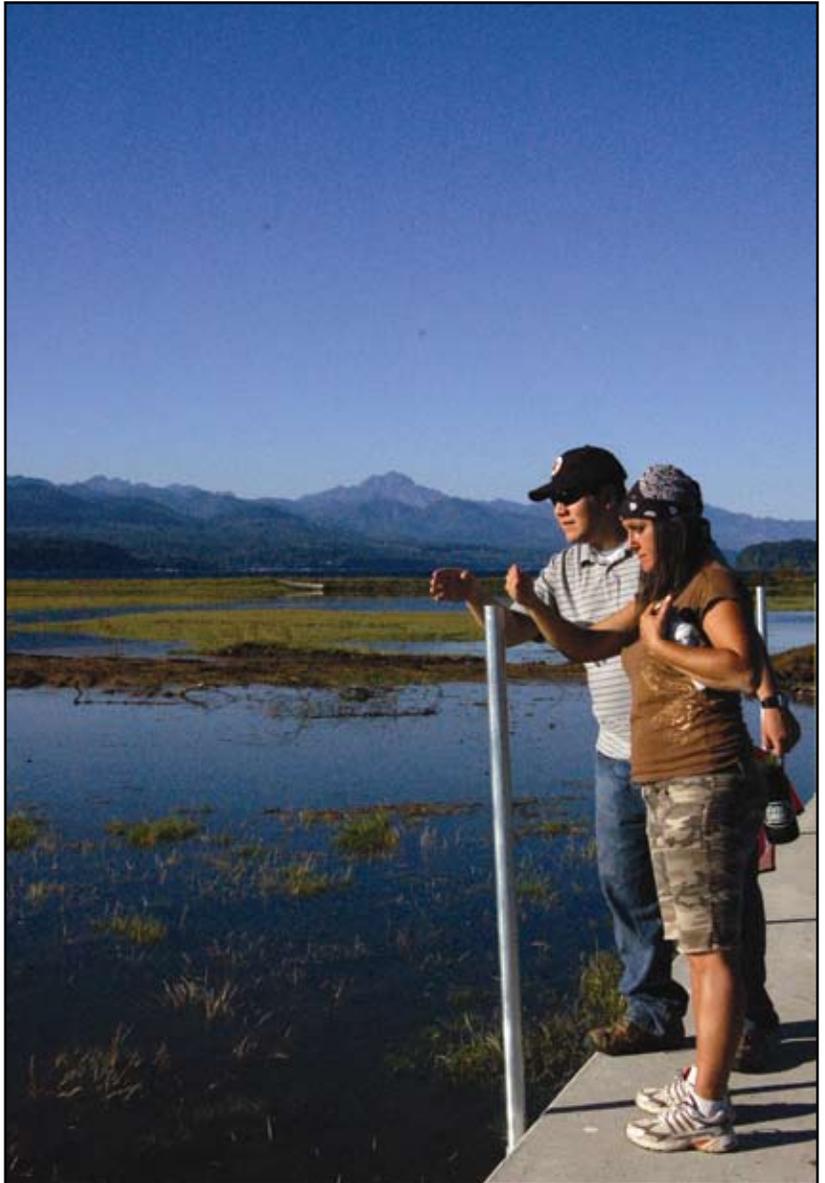
In September, the tribe breached the dikes in sections with excavators, so the estuary would not be inundated with too much sediment flow.

In addition, 3,000 linear feet of a raised concrete walkway was installed, allowing tribal members access through a forested wetland to harvesting and ceremonial areas. The elevated walkway also allows the tides to flow freely within the estuary.

The dike system, built in the early 1940s, has prevented the delta from receiving a natural tidal flow, severely affecting the health of the estuary and eliminating important juvenile salmon rearing habitat.

“Removal of the dikes will allow nutrients to flow through the area and allow for a more natural restoration of the property as well as benefit finfish and shellfish,” said Keith Dublanica, the Skokomish Tribe’s senior lands planner. “The tribe wants to see the river flow again through the delta.”

This was the first part of a multi-phase effort to restore more than 300 acres of the estuary to its historic conditions, including the restoration of nearby Nalley Island in 2008. The Skokomish River, in the Hood Canal basin, directly supports Olympic Peninsula bull trout, Hood Canal summer chum and Puget Sound chinook – all listed as “threatened” under the federal Endangered Species Act.



Tribal members Tom Strong and Kris Miller observe the tide flooding the Skokomish estuary for the first time in 60 years. Hours earlier, the area looked like a field of grass with ponds scattered throughout. *NWIFC: T. Royal*

Funding for this phase of the project came from the state of Washington’s Estuary and Salmon Restoration Program. The funds were administered by the Mason Conservation District. Additional support was provided by the Pacific Coast Salmon Recovery Fund, Washington Salmon Recovery Funding Board, City of Tacoma, Mason Conservation District, Mason County Public Utilities District No. 1, U.S. Army Corps of Engineers, Environmental Protection Agency and the Skokomish Tribal Nation.

Makah Tribe Protects Rare Ecosystem



Jon Gallie, wildlife biologist, and Rochelle Cooke, weed technician for Makah, pull yellow flag iris from the Waatch River floodplain.

NWIFC: D. Preston

The diversity of ecosystems found on Makah tribal lands isn't immediately evident, but a rich complement of interconnected natural worlds exists here.

The Pacific Ocean intrudes on the Waatch River floodplain, creating a biological soup of life forms. Sand dunes shift and flow on the coast and old growth forests fill the skyline.

To protect these ecosystems, the Makah Tribe is vigorously attacking invasive weeds such as Scotch broom on the sand dunes, and yellow flag iris and tansy ragwort on the Waatch River floodplain. The Scotch broom can easily overwhelm the dunes, crowding out native plants.

"Because it's an open area, it's easy for weeds to invade," said Jon Gallie, wildlife biologist and weed control coordinator for the Makah Tribe.

The Waatch River floodplain contains Pacific silverweed, which still is eaten today. The roots are cooked to remove the bitter taste, leaving a parsnip-like flavor.

"We prepared silverweed for the Makah diabetes luncheon," said Makah tribal member Maria Pascua, language instructor for the Makah Cultural and Research Center.

The tribe's weed management program includes monitoring and plans to prevent weed infestation before it starts, by planting a mix of native grasses and wildflower seeds.

"We're working with Rayonier Seed and will encourage timber companies to use it after logging to give competition to the weeds and benefit wildlife," Gallie said. The tribe also is working with Clallam County to eliminate invasive species such as knotweed.

Information to help landowners battle the invaders will be distributed in handouts and available on the Internet.

"We have to be vigilant about keeping weeds out of these ecologically rich areas," Gallie said. "It would be hard to re-establish the native plant communities once they were lost."

Shellfish Management



Billy Frank Jr., chairman of the Northwest Indian Fisheries Commission, signs a document celebrating the successful settlement of the shellfish agreement between tribes, the state of Washington, commercial shellfish growers and the federal government. Other participants include, from left, Doug Sutherland, Commissioner of Public Lands, Gov. Chris Gregoire, U.S. Rep. Norm Dicks and Michael Olsen, Bureau of Indian Affairs.

NWIFC: D. Preston

Shellfish have been a mainstay of western Washington Indian tribes for thousands of years. Clams, crab, oysters, shrimp and many other species were readily available for harvest year-round. Because large amounts could be harvested, cured and stored for later consumption with relative ease, shellfish were an important source of nutrition for tribes.

Based on their treaty-reserved rights, tribes in western Washington are co-managers of the shellfish resource along with the state of Washington.

Shellfish remain important today for economic, subsistence and ceremonial purposes. The rapid decline of many western Washington salmon stocks, due in part to habitat loss from the region's burgeoning human population, has pushed shellfish to the forefront of many tribal economies.

The treaty Indian tribes typically maintain their own shellfish programs. A shellfish biologist assesses shellfish populations throughout a tribe's harvest area and recommends regulations based on the number of shellfish available for harvest.

Tribes enhance naturally occurring shellfish populations, often to the benefit of both tribal and non-tribal harvesters. Shellfish enhancement results in higher and more consistent levels of harvest than would occur naturally.

Tribes also conduct research on under-utilized species such as Olympia oysters, sea cucumbers and sea urchins. Often this research leads to new fisheries or a better understanding of the marine ecosystem.

Along with the state co-managers, tribes closely monitor beaches and the shellfish harvested from those beaches to ensure protection of public health.

Preliminary data for 2006, the most recent data available, indicate that treaty tribes in western Washington harvested approximately 911,784 pounds of manila and native littleneck clams; 4.3 million pounds of geoduck clams; 475,378 pounds of oysters; 24.5 million pounds of crab and 238,272 pounds of shrimp. These fisheries occur throughout Washington coastal areas and Puget Sound.

Tribal Shellfish Rights

The tribal right to harvest shellfish lies within a series of treaties signed with representatives of the federal government in the 1850s.

"The right of taking fish at usual and accustomed grounds and stations is further secured to said Indians... Provided, however, that they shall not take shell-fish from any beds staked or cultivated by citizens."

*– Treaty of Point No Point,
Jan. 26, 1859*

Through the treaties, the tribes relinquished most of what is now western Washington, but also reserved the right to harvest fish and shellfish from all of their traditional areas.

Tribes were, however, specifically excluded by the treaties from harvesting shellfish in areas “staked or cultivated” by non-Indian citizens. As the state government continued to allow tidelands to be purchased by non-Indians, tribes were slowly excluded from their traditional shellfish harvest areas.

Following the landmark 1974 ruling in *U.S. v. Washington* (the Boldt decision), which reaffirmed the tribes’ treaty-reserved harvest right and established them as co-managers, the tribes and state of Washington embarked on a cooperative management effort that has since branched into other collaborative natural resource management efforts.

The atmosphere of cooperation gave the tribes hope that their treaty-reserved rights to shellfish harvest and management could be restored. Talks between the tribes and state to address tribal shellfish needs began in the mid-1980s, but by 1989, the tribes were forced to file suit in federal court to have their treaty shellfish harvest rights adjudicated. Further efforts to negotiate a settlement also proved unsuccessful and the issue went to trial in 1994.

The Rafeedie Decision and Implementation Plan

Federal District Court Judge Edward Rafeedie followed in the footsteps of Judge George Boldt when he issued the shellfish ruling in 1994. He ruled that the treaties’ “in common” language meant the tribes had reserved harvest rights to half of all shellfish from their usual and accustomed places.

“A treaty is not a grant of rights to the Indians but a grant of rights from them,” Rafeedie wrote in his December 1994 decision.

While “staked or cultivated” areas – those specifically set aside for non-Indian commercial purposes – were exempt from tribal harvest, Rafeedie ruled that the tribes were entitled to half of the shellfish that would otherwise occur naturally on those tidelands. This meant shellfish growers were required to allow tribal access to their shellfish. This aspect of the case greatly challenged cooperative management in the state and remained unresolved until 2007, when a settlement was reached.

The Shellfish Settlement

While Rafeedie’s ruling denied tribal access to half of all shellfish produced on non-Indian commercial tidelands, it upheld the tribal right to harvest half of the naturally occurring shellfish on those tidelands. Tribal access to those shellfish, however, would be hugely disruptive and costly for commercial shellfish growers who had spent many years enhancing those tidelands, unaware of the treaty encumbrances.

“Fault for creating this controversy lies squarely within the state of Washington and the United States for selling the tidelands and not objecting to the sale, respectively,” Rafeedie said.

Rather than spending years in court or trying to implement the conflicted ruling, the tribes and commercial shellfish growers finalized an agreement in 2007 that protects and enhances the resource while resolving legal issues from Rafeedie’s ruling.

The agreement preserves the health of the shellfish industry, recognizes the importance of the shellfish harvest rights to the tribes, and provides greater shellfish harvest opportunities for everyone in the state. Key components of the agreement between shellfish growers and the tribes include:

- ◆ The tribes will forgo their treaty right to harvest an estimated \$2 million of shellfish annually from commercial shellfish growers’ beds.
- ◆ Over the next 10 years, growers will provide \$500,000 worth of shellfish enhancement on public tidelands of the state’s choosing, adding value to the agreement that benefits all citizens of the state.
- ◆ The tribes will be able to access a \$33 million trust, established with \$11 million in state funds and \$22 million in federal funds, to acquire and enhance other tidelands to which they will have exclusive access.

“We had a choice, and we chose cooperation,” said Billy Frank Jr., chairman of the Northwest Indian Fisheries Commission. “Everyone loses when we turn to the courts to settle natural resource issues. The shellfish resource is too important – to tribal cultures, to the shellfish industry and to everyone who lives in the Puget Sound region – for us to fight over it.”

“Shellfish growers and the tribes have developed a fair solution to a difficult problem,” said Bill Taylor, president of Taylor Shellfish Co. “This agreement will right a historical wrong and will put more shellfish on the tidelands for everyone.”

Shellfish Management Case Study

Jamestown S’Klallam Tribe Studying Spot Shrimp

Aleta Erickson gently tweezes 100 eggs, each the size of a large grain of sand, from the body of a pregnant female spot shrimp. Taking the time to count shrimp eggs – a female can carry as many as 5,000 – is giving the Jamestown S’Klallam Tribe important information about the spot shrimp population in the Strait of Juan de Fuca.

Erickson, the tribe’s marine ecologist, and Lohna O’Rourke, the tribe’s biologist, have been looking at shrimp fecundity, a measurement of egg production, during the year-long study. As part of this study, females with eggs are closely measured and the total number of eggs are counted – a method that, while time consuming, is believed to be the most accurate method of determining fecundity.

In a traditional fecundity study, a representative sample of the eggs is counted and weighed to determine an average number of eggs produced. Both methods are being evaluated to determine the extent of the differences between methods.

“An important goal of shellfish management is maintaining the population at an adequate level to ensure availability for future harvest,” said Kelly Toy, Jamestown S’Klallam Tribe’s shellfish manager. “To measure the effects on the harvestable population, managers need to know to what extent fishing reduces the egg production of a stock. This requires estimates of many factors, including the average fecundity.”

The Washington Department of Fish and Wildlife has collected fecundity data only in Hood Canal, and not in other areas of Puget Sound. The spot shrimp in the Straits are significantly larger than Hood Canal spot shrimp and produce more eggs.

The number of eggs a female carries has been shown to be related to the size of the shrimp. Although the areas are geographically different, it appears that the difference in fecundity is related to size and not environmental factors.



The eggs are removed from a female spot shrimp during a fecundity study conducted by the Jamestown S’Klallam Tribe. *NWIFC: T. Royal*

Adding to the complex situation, shrimp begin their lives as males and for a short time period move into a transition stage, and then become females. Increased fishing pressure may have negative impacts to the shrimp populations by decreasing the size when transition occurs, which in turn will affect the number of eggs produced. Baseline data is needed to be able to monitor changes in size and fecundity.

Spot shrimp harvest quotas in Puget Sound are based on historical catch rates and effort. “We can not determine what the sustainable harvest quota is pre-season, so our hope is that this study will fill in one gap in shrimp management data,” Toy said.

Wildlife Management

Wildlife resources have always been central to the cultures of the treaty Indian tribes in western Washington. Elk, deer, waterfowl and other wildlife have long provided a source of food and clothing for Indian people.

As with salmon and shellfish, the tribes reserved the right to harvest wildlife in treaties with the U.S. government:

“The right of taking fish at all usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of the Territory, and of erecting temporary houses for the purpose of curing, together with the privilege of hunting and gathering roots and berries on open and unclaimed lands...”

– Treaty of Point Elliott, Jan. 22, 1855

Little has changed over the centuries. The ancient link between the tribes and wildlife remains strong. Wildlife still provides important nutrition to Indian families on reservations where unemployment can run as high as 80 percent. As traditional foods, deer, elk and other wildlife remain important elements of feasts for funerals, naming ceremonies and potlaches. Hides, hooves, antlers, feathers and other wildlife parts are still used for traditional ceremonial items and regalia.

Unfortunately, the quality and quantity of wildlife habitat is declining rapidly in western Washington. Where virgin forests once stood there is now urban sprawl. Deer and elk herds have been squeezed into smaller and smaller areas of degraded and fragmented habitat. Tribal members have been forced to hunt farther and farther from home to harvest their treaty-reserved share of wildlife resources.

Developing regional plans

The treaty Indian tribes in western Washington, as responsible co-managers, work cooperatively with the state of Washington, citizen groups and others to manage wildlife resources. The tribes and state recently began meeting to negotiate regional management agreements for hunting animals such as deer, elk, bear, goats and cougars. Western Washington has been divided into three regions, and the tribes from each area are meeting with the state to draft agreements tailored to their regions.

The agreements will coordinate hunting seasons, harvest reporting and enforcement regulations. The tribes and state also plan to share research data such as herd population and mortality estimates – information that is crucial to planning harvests.



A black-tail deer fawn is monitored by Makah wildlife biologists via a radio collar. NWIFC: C. Madsen

State and federal courts have consistently upheld the right of treaty tribes to hunt on open and unclaimed land, free of state regulation. The courts generally have ruled that lands such as national forests, which are not incompatible with hunting, are open and unclaimed. Further, the courts have ruled that to apply a state regulation to a tribal member with a treaty hunting right, the state must prove that the regulation is both reasonable and necessary for conservation purposes.

In 1999, the U.S. Supreme Court upheld the tribal treaty right to hunt on state lands free of state regulation in *Minnesota v. Mille Lacs Band of Chippewa Indians*. The Washington State Supreme Court made a similar ruling in 1999 in *State v. Buchanan*.

The case involved a member of a treaty tribe charged with harvesting two elk during a closed season at the state-owned Oak Creek Wildlife Area. Two lower courts ruled Buchanan was simply exercising his treaty-reserved right to hunt on open and unclaimed land when he harvested the two elk.

The state Supreme Court ruled that treaty tribes may hunt within original tribal lands and traditional areas and that the state-owned Oak Creek Wildlife Area was open and unclaimed land. The court threw out the state’s argument that the treaty hunting right was eliminated when Washington became a state. As in the *Mille Lacs* case, the court said that only the U.S. government may abrogate a treaty right.

While tribes prefer to cooperate with the state of Washington in the implementation of their treaty hunting rights and responsibilities as co-managers of the wildlife resources, they realize that they may be forced to seek a clarification of their treaty hunting rights through the federal courts.

Principles of Tribal Wildlife Management



Scott Schuyler, policy representative for the Upper Skagit Tribe, butchers an elk. *NWIFC: K. Neumeyer.*

The treaty Indian tribes in western Washington have a long history of co-managing natural resources with the state of Washington. The tribes and state have had numerous successes in implementing cooperative natural resource management efforts to protect, restore and enhance the productivity of natural resources in Washington.

The Washington Fish and Wildlife Commission has recognized that “the preservation of healthy, robust and diverse fish and wildlife populations is largely dependent on the state and tribes working in a cooperative and collaborative manner.”

Nooksack herd rebounds

The recent harvest of some Nooksack elk in the North Cascades Mountains is an example of state-tribal cooperation. In the 1990s, Indian and non-Indian hunters stopped hunting the Nooksack herd because its population was rapidly declining.

Tribes contributed close to a million dollars and thousands of hours toward restoration work in the Nooksack River watershed, with individual tribes spending as much as \$250,000 during the past decade.

Tribal and state efforts to rebuild the declining Nooksack herd included relocating 98 elk from the Mount St. Helens area, projects to improve elk forage and a decade-long moratorium on hunting.

In 2007, as a result of these efforts, the herd numbered about 600 elk, up from fewer than 350 in recent years. Twenty years ago, the herd numbered about 1,700 elk. The rebounding of the herd signaled to wildlife managers that the population could sustain itself through a hunt. State and tribal wildlife biologists determined that the herd had an adequate bull-to-cow ratio to allow a limited hunt of 30 bull elk without affecting productivity. The nine Point Elliott Treaty tribes shared 15 permits, and non-tribal hunters were permitted to harvest the other 15 bull elk.

It is important to note that tribal hunters do not hunt for sport. Hunting is a spiritual and personal undertaking for each hunter. All tribes prohibit hunting for commercial purposes.

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 2006-2007, tribal members harvested 984 deer and elk, while non-Indian hunters harvested 44,730. Most tribal hunters do not hunt only for themselves. The culture of tribes 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 who cannot hunt for themselves.

Enforcement, Education

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. As responsible managers, tribes know the value of enforcement as a management tool. 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 sound biological information about the ability of the resource to support harvest. Before opening any area to hunting, many tribes forward their regulations to the Washington 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. They are required to report all attempts at harvest. If a hunter is successful, he must tag the animal and submit a harvest report to the tribe. If a hunter is unsuccessful, he still must report the result, which yields valuable data for state and tribal wildlife managers. 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.

A number of tribes conduct hunter education courses, aimed especially at young tribal members, to ensure their hunters are safe when exercising their treaty right. Students are taught how to handle firearms, ethical considerations and the reasons behind tribal hunting regulations. Cultural aspects of hunting, as well as treaty hunting rights, also are covered in the classes.

Collectively, the tribes have created the Inter-tribal Wildlife Committee of the Northwest Indian Fisheries Commission to provide a forum for addressing inter-tribal issues. The committee also provides a unified voice in discussions with state and federal wildlife managers.



Vanessa Martinez, Upper Skagit tribal member, helps Donna Schopf, system coordinator for the tribe, wrap elk meat. *NWIFC: K. Neumeyer.*

Wildlife Management Case Study

Meat Salvage Returns Elk to Tribal Tables

Many North Sound tribes traditionally relied on elk meat for sustenance. But these days, there are fewer hunting opportunities because of diminishing quality habitat and declining elk populations.

Without sufficient harvest opportunities to feed their members, tribes turn to meat salvage. The proximity of the Upper Skagit Tribe's reservation to Highway 20 puts the tribe in a prime location to retrieve animals that have been struck by vehicles. Each year, the tribe recovers three to five elk that have been killed on the road.

In September, members of the Upper Skagit Tribe recovered a seven-point elk that was struck by a vehicle along Highway 20. The animal was towed from the bank of the Skagit River and shared with the Swinomish Tribe.

"Elk are as important to our culture as salmon. We do what we have to do, because we don't have access to enough animals," said Scott Schuyler, policy representative for the Upper Skagit Tribe. "We're making good use of this traditional meat, which would otherwise go to waste. We share the salvaged elk with the other Point Elliott tribes." In addition to Upper Skagit and Swinomish, the Point Elliott Treaty tribes are Lummi, Muckleshoot, Nooksack, Sauk-Suiattle, Stillaguamish, Suquamish and Tulalip.

"When the tribes signed treaties with the U.S. government, ceding the land that is now western Washington, we reserved the right to hunt on open and unclaimed land," said Todd Wilbur, chairman of the inter-tribal hunting committee of the Northwest Indian Fisheries Commission and a member of the Swinomish Tribe. "Now, we don't have any place to hunt because the habitat has been fragmented by development."

NWIFC FY2007 Overview

“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 Northwest Indian Fisheries Commission (NWIFC) was created in 1974 by the treaty Indian tribes in western Washington as a result of the *U.S. vs. Washington* litigation that affirmed fishing rights reserved by the tribes in treaties signed with the federal government in the 1850s.

The commission’s role is to assist the tribes in conducting biologically sound fisheries and to provide member tribes with a single, unified voice on fisheries management and conservation issues. Member tribes are: Hoh, Jamestown S’Klallam, Lower Elwha Klallam, Lummi, Makah, Muckleshoot, Nisqually, Nooksack, Port Gamble S’Klallam, Puyallup, Quileute, Quinault, Sauk-Suiattle, Skokomish, Squaxin Island, Stillaguamish, Suquamish, Swinomish, Tulalip and Upper Skagit.

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.

The NWIFC is a support service organization that provides direct services to member tribes to assist them in their natural resource management efforts. These services are provided through an economy of scale that enables tribes to efficiently use limited federal funding provided for their natural resource management activities.

The NWIFC employs about 65 full-time employees in its administration, fishery, policy analyst, wildlife, and information and education programs. The NWIFC is headquartered in Olympia, Wash., with satellite offices in Forks, Kingston and Mount Vernon.



Suquamish hatchery manager Mike Huff and NWIFC fish pathologist Marcia House gather samples from chum salmon. NWIFC: T. Royal

Year in Review

Puget Sound Partnership

Concerns about the declining health of the marine environment of Puget Sound and along the Washington coast continued to grow in 2007. Tribes are at the center of two major efforts now under way to protect and restore those ecosystems.

Washington Gov. Chris Gregoire created the public/private Puget Sound Partnership in 2005 to significantly improve the health of Puget Sound by 2020. NWIFC Chair Billy Frank and former U.S. Environmental Protection Agency director Bill Ruckelshaus were selected to co-chair development of the Partnership and now serve on the Partnership’s Leadership Council, the governing body of the Partnership.

In addition to a \$52 million Legislative appropriation in 2006 to clean up toxic sites, prevent oil spills and restore nearshore habitats, additional state funding for the Partnership is anticipated from the 2008 Legislative session.

Gov. Gregoire’s 2008 supplemental budget includes \$2.2 million for the development of the Partnership’s Action Agenda – a roadmap for restoration – to be completed by Sept. 1, 2008.

The Partnership’s infrastructure continues to develop as staff is hired and assignments are made to the Ecosystem Coordination Board, science panels and other advisory groups. Tribes are active participants in these efforts, but need consistent federal funding to remain effectively engaged.

Ocean Ecosystem Management

To meet some of the natural resource challenges along the Pacific Coast of Washington, coastal treaty Indian tribes, the state of Washington and the federal National Oceanic and Atmospheric Administration's National Marine Sanctuary Program established an Intergovernmental Policy Council to manage the marine resources of Olympic Coast National Marine Sanctuary (OCNMS). The policy council will provide a forum for tribal, state and federal governments to coordinate activities within the sanctuary.

OCNMS was created in 1994, encompassing 3,310 square miles of Washington coastal waters from Neah Bay to the Copalis River. The sanctuary is entirely made up of the traditional harvest areas of the Hoh, Makah and Quileute tribes and the Quinault Indian Nation (QIN).

The Intergovernmental Policy Council will facilitate the exchange of information and recommendations regarding management of marine resources within the sanctuary.

The tribes and state of Washington also are developing a five-year ocean monitoring and research initiative to support a transition to ecosystem-based management. Effective management of the ocean ecosystem relies on development of basic, baseline information against which changes can be measured. The tribal/state Ocean Ecosystem Initiative will expand existing physical and biological databases to enhance ecosystem-based management capabilities and lead to improved information sharing.

Shellfish, Salmon Advances

Puget Sound treaty Indian tribes and commercial shellfish growers finalized a major agreement in 2007 that will protect and enhance the resource while resolving legal issues from a 1994 federal court ruling that reaffirmed treaty-reserved tribal shellfish harvest rights.

The agreement preserves the health of the shellfish industry, recognizes the importance of shellfish harvest rights to the tribes, and provides greater shellfish harvest opportunities for everyone in the state.

Tribes also won a major victory in 2007 regarding their treaty-reserved right to ensure protection for salmon from habitat degradation when federal Judge Ricardo Martinez ruled that state culverts that block fish and diminish salmon runs violate Indian treaty fishing rights. The tribes and state are now sitting down together to develop a comprehensive remedy for repairing the culverts.

NWIFC Activities

Fishery Management and Planning

The primary objective of the Fishery Management and Planning Division is to provide technical assistance and coordination to member tribes in their annual and long-range fishery management planning activities. Activities included:

- ◆ Long-range planning, wild salmon recovery efforts and federal Endangered Species Act implementation.
- ◆ Development of pre-season fishing agreements.
- ◆ Development of pre-season and in-season run size forecasts.
- ◆ In-season fisheries monitoring.
- ◆ Post-season fishery analysis and reporting.

Quantitative Services

The Quantitative Services Division's objective is to assist tribal fishery management programs by providing relevant data, quantitative tools and analyses, and technical consulting services to tribal and NWIFC projects. Activities included:

- ◆ 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

The Enhancement Services Division provides tribal support services in enhancement planning, hatchery coordination, coded-wire tagging and fish health. Activities included:

- ◆ 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.

U.S./Canada Pacific Salmon Treaty

The Pacific Salmon Treaty of 1985 provides for tribal representation at all levels of the Pacific Salmon Commission, which implements the treaty. NWIFC staff are involved in many aspects of the treaty's implementation. Activities included:

- ◆ Facilitating inter-tribal and inter-agency meetings, developing issue papers and negotiation options.
- ◆ Serving on the Fraser sockeye and pink, chum, coho, chinook, 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.

Habitat Services

The Habitat Services Division provides coordination, representation and technical assistance to member tribes on fish habitat and other environmental issues. The division monitors these issues and acts as an information clearinghouse. Activities included:

- ◆ Coordinating policy and technical level 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 Quality and Ambient Monitoring programs.
- ◆ Implementing the Salmon and Steelhead Habitat Inventory and Assessment Project.

Information and Education Services

The Information and Education Services Division provides comprehensive public relations and educational services to member tribes. Activities included:

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