

Tribal Natural Resources Management



**A report from the Treaty Indian Tribes
in Western Washington
2015**

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

Member Tribes of the Northwest Indian Fisheries Commission



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Cover: Shawn Johnstone, left, and Skip Pickett, Quinault Indian Nation hatchery technicians, pull a coho from a net as part of the Quinault Indian Nation's hatchery operations on Lake Quinault. Photo: Debbie Preston. Map: Ron McFarlane.



Year in Review



Lorraine Loomis

As we celebrated the 40th anniversary of *U.S. v. Washington* (the Boldt decision) this year we also mourned the loss of Billy Frank Jr., our longtime chairman and good friend. Billy, 83, passed away on May 5, 2014.

From his first arrest at age 14, Billy spent his entire life fighting for the recognition of tribal rights reserved in treaties with the United States. The 1974 ruling by Judge George Boldt in *U.S. v. Washington* re-affirmed the tribal treaty right to harvest salmon and established the tribes as natural resources co-managers entitled to half of the harvestable salmon returning annually to western Washington waters.

Today tribes are leaders in the management of the region's salmon fisheries and other natural resources.



Billy Frank Jr.

I am honored and humbled to follow in Billy's footsteps as chair of the Northwest Indian Fisheries Commission. The tribes remain committed to Billy's legacy and direction to "stay the course" with salmon recovery. Our goal is to return all salmon populations to sustainable levels that can

support harvest. We commit ourselves to this task with the recognition that we must act in the best interests of those who will follow us seven generations from now.

Treaty Rights at Risk

Sadly, ongoing loss and damage to salmon habitat has stalled salmon recovery and threatens tribal treaty rights. For those rights to have meaning, there must be salmon available for harvest. That is why we are continuing the Treaty Rights at Risk initiative begun in July 2011 by Billy and other tribal leaders.

Through this effort we are asking the federal government, our trustee, to align its agencies and programs and take charge of a more coordinated salmon recovery effort. We want the federal government to take charge of salmon recovery because it has the obligation and the authority to ensure both salmon recovery and protection of treaty rights.

We are disappointed with the federal government's slow response and lack of progress. There has been a lot of discussion, but little action by the federal government, in spite of its responsibility to protect tribes' treaty rights and recover salmon stocks listed as threatened under the federal Endangered Species Act (ESA).

We have requested that the Treaty Rights at Risk initiative be institutionalized in the U.S. government via President Obama's Council on Native American Affairs created several years ago. Addressing tribal natural resources concerns was supposed to be one of five main areas of work when the council was founded. Subgroups of the council already have been formed to focus on economic development, education, climate change and energy. We think a similar group should be formed to address tribal natural resources concerns, especially salmon recovery and treaty rights.

Importance of Hatcheries

Even as we struggle with the continual decline of salmon populations caused by lost and damaged habitat, hatcheries are under attack. Hatcheries were designed to make up for lost natural salmon production, and are essential to fulfilling tribal

treaty rights, but federal funding has not kept pace with needed repairs and replacement of aging facilities. Tribes produce about 40 million salmon and steelhead annually.

The National Marine Fisheries Service has worsened the situation by delaying review and approval of permits required under the ESA for hatchery operations. The delays led to legal action that prevented the release last fall of nearly 1 million hatchery-raised steelhead in western Washington. Indian and non-Indian fishermen will feel the loss of those fish for years to come.

Hatcheries and the salmon they produce are absolutely necessary as long as lost and damaged habitat prevents salmon recovery. They deserve more support from all corners. Today, most of the chinook and coho harvested by Indian and non-Indian fishermen come from hatcheries.

Updated Water Quality Standards

Tribes continued their efforts to encourage the state of Washington to adopt a more realistic fish consumption rate as part of updating water quality standards. The higher the fish consumption rate, the cleaner the water must be.

For more than 20 years, the state has operated under water quality rules based on a fish consumption rate of 6.5 grams per day, or one 8-ounce serving a month. This was one of the lowest rates in the nation, even though Washington residents eat more fish and shellfish than people in other states, and most tribal members consume much more than that.

In July, Gov. Jay Inslee approved an increase to 175 grams per day, a compromise rate supported by the tribes, but still lower than the actual amount of fish and shellfish eaten by Indian people in western Washington. At the same time, Inslee increased the risk of getting cancer from water pollution from one in a million to one in 100,000. The tenfold increase in cancer risk effectively cancels out most of the benefits of the higher fish consumption rate.

As a result, the treaty tribes have approached their trustee, the U.S. Environ-

mental Protection Agency, to step in and enact new water quality rules for the state. The 1972 federal Clean Water Act requires states to implement standards that ensure waters are clean enough to support fish that are safe to eat.

Fossil Fuel Transportation

Proposals to build coal and oil export terminals in western Washington continued as major concerns in 2014. The planned increases in train and ship traffic threaten the health and safety of tribal members as well as treaty-protected rights and resources.

Coal export terminals proposed for Cherry Point near Bellingham and Longview on the Columbia River would be fed by hundreds of trains daily from coal fields in Montana and Wyoming. Coal dust from each train would be spread all along its route.

Also proposed is a plan to use mile-long crude-oil trains to feed massive new oil terminals in Grays Harbor. As with increased coal train traffic, tribes are deeply concerned about health, safety and environmental issues associated with the trains and ships transporting the oil.

Disastrous Fraser Sockeye Season

A high diversion rate of Fraser River sockeye through Johnstone Strait around the northern part of Vancouver Island led to poor catches for treaty tribal and non-tribal fishers in 2014. Nine treaty Indian tribes in western Washington harvest sockeye returning to British Columbia's Fraser River.

Typically, about half of the returning sockeye swim around Vancouver Island and through the Strait of Juan de Fuca where treaty tribal and non-Indian commercial fishermen can harvest them when they enter U.S. waters. By the end of August, Canadian fishermen had caught about five million fish; non-Indian commercial and treaty tribal fishermen harvested about 275,000.

Tribes will be requesting a declaration of natural disaster under the Stafford Disas-

ter Relief and Emergency Assistance Act, and a fisheries economic disaster under the Magnuson-Stevens Act, which would provide services and financial assistance to fishermen.

Culvert Repairs Begin

As part of the favorable ruling for the tribes in the Culvert Case, talks began in 2014 to prioritize repair of culverts under state roads that are barriers to fish passage. The state was ordered by the federal court in 2013 to repair more than 600 state-owned culverts over the next 17 years. Fish-blocking culverts deny salmon

access to hundreds of miles of good habitat in western Washington streams, affecting the fish in all stages of their life cycle. The treaty tribes and the U.S. filed the initial Culvert Case litigation in 2001 under *U.S. v. Washington*. The state has appealed the ruling.

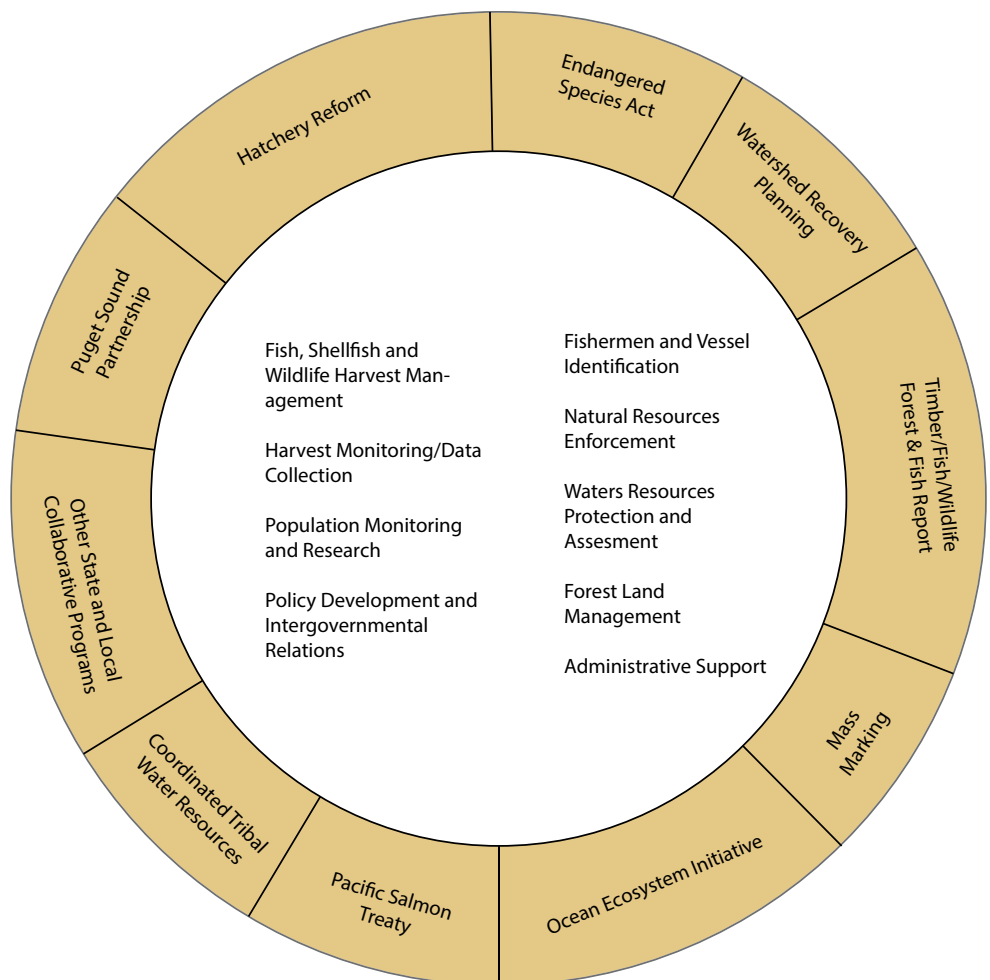
To find out more about these and other natural resources management issues important to the treaty tribes, visit the Northwest Indian Fisheries Commission website at nwifc.org.

Lorraine Loomis

Lorraine Loomis
NWIFC Chair

Tribal Natural Resources Management Core Program

Natural resources management functions and associated programs of the treaty tribes in western Washington:



Habitat Management

Habitat protection and restoration are essential for recovery of wild salmon in western Washington. Tribes are taking action to recover salmon in each watershed.

- The tribes continue to support the Treaty Rights at Risk initiative, calling on the federal government to align its agencies and programs to better meet salmon recovery goals, particularly those for habitat protection and restoration. The initiative calls on the federal government to lead a more coordinated salmon recovery effort because it has both the obligation and authority to recover salmon and protect tribal treaty rights.
- The NWIFC Salmon and Steelhead Habitat Inventory and Assessment Program (SSHAP) provides a “living database” of local and regional habitat conditions. SSHAP has launched an interactive map to track repairs to state-owned culverts; a tool to map potential steelhead habitat; and a data exchange for research about the nearshore environment.
- Tribes continue to address the habitat concerns identified in the 2012 State of Our Watersheds report. The report, which documents ongoing loss and damage of salmon habitat, can be viewed at nwifc.org/sow. It will undergo a comprehensive update in 2015.
- Tribes conduct extensive monitoring of water quality for pollution, and ensure factors such as dissolved oxygen and temperature levels are adequate for salmon and other fish. To make limited federal funding work to its fullest, tribes partner with state agencies, industries and property owners through collaborative habitat protection, restoration and enhancement efforts.
- In western Washington, the National Oceanic and Atmospheric Administration’s Pacific Coastal Salmon Recovery Fund has supported projects that have restored thousands of acres of forest, protected hundreds of acres of habitat and removed hundreds of fish passage barriers.

Lower Elwha Klallam Tribe Monitors Restored River



Tiffany Royal

With the Glines Canyon and Elwha dams completely removed, the Elwha River now flows freely.

While two massive fish-blocking dams on the Elwha River were being torn down between 2011 and 2014, the Lower Elwha Klallam Tribe was studying how the river, salmon and wildlife were responding to dam removal.

After the 108-foot-tall Elwha and 210-foot-tall Glines Canyon dams were built in the early 1900s, millions of cubic yards of sediment built up behind the structures, creating lakes Aldwell and Mills.

As the dams were deconstructed, sediment flowed downriver, changing the dynamics of the river and restoring the river mouth from cobblestone to sandy beach. Scientists have found forage fish and shellfish, such as Dungeness crab, using the new habitat.

In the estuaries, tribal staff are seining the ponds to examine fish populations and study the stomach contents of juvenile salmon.

After the Elwha Dam was completely removed by spring 2013, salmon were found spawning above the former dam site. The second dam, Glines Canyon, was completely removed by end of September 2014 and soon after, bull trout and chinook were detected beyond that dam site.

Biologists have been counting adult fish through scuba surveys and a sonar camera in the lower river. Since 2013, biologists have counted nearly 9,000 chinook and steelhead returning to the river.

The tribe’s new hatchery was finished in 2010 and regularly spawns and rears coho and chum salmon. It also operates steelhead and pink broodstock programs.

Since lakes Aldwell and Mills were drained, crews from the tribe, Washington Conservation Corps and Olympic National Park have been eradicating invasive plants and replacing them with native trees, shrubs and grasses within the new open riverbeds. More than 50 engineered logjams have been installed to help slow the river’s velocity and create pools and other salmon habitat.

The tribe’s wildlife staff studied river otters and American dippers, looking at how the animals used the river for food and habitat and how those needs were impacted by dam removal. Post-dam removal, the wildlife staff is monitoring how elk, deer and small mammals are using the newly exposed lakebeds as habitat.

Hatchery Management

Hatcheries must remain a central part of salmon management in western Washington as long as lost and degraded habitat prevents watersheds from naturally producing abundant, self-sustaining runs of sufficient size to meet tribal treaty fishing harvest rights.

- Treaty Indian tribes released more than 39 million salmon in 2013, including 10 million chinook, 16.5 million chum and 7.7 million coho.

- Most tribal hatcheries produce salmon for harvest by both Indian and non-Indian fishermen. Some serve as wild salmon nurseries that improve the survival of juvenile fish and increase returns of salmon that spawn naturally in our watersheds.
- Tribes conduct an extensive mass marking and coded-wire tag program. Young fish are marked by having their adipose fin clipped before release. Tiny coded-wire tags are inserted into the noses of young salmon. The tags from marked fish are recovered in fisheries, providing important information about marine survival, migration and hatchery effectiveness.

Tribal Programs Support Threatened Steelhead

Tribal hatcheries not only produce fish for harvest, but also provide a vital role in helping imperiled stocks. Some tribal facilities are the linchpin in restoring weak runs of steelhead. Puget Sound steelhead are listed as threatened under the federal Endangered Species Act.

Hatchery programs started by the Skokomish, Puyallup and Muckleshoot tribes in 2006 to rescue weak runs of steelhead have seen tremendous results.

The steelhead population in the Skokomish River has doubled since the Skokomish Tribe began its supplementation project as part of a 16-year-long project to boost the steelhead stocks in Hood Canal.

“The increase in the number of egg nests has given us an early indication that the project is working, but the long-term monitoring will be the true test of its success,” said Matt Kowalski, the tribe’s steelhead biologist.

The tribe spent the past eight years collecting 30,000 steelhead eggs annually from the Skokomish River. The eggs, collected between May and June, have been raised to smolts in a state hatchery. Most

are released as juveniles, but 400 of the fish are transported to a federal hatchery where they are raised to 4-year-old adults before release to improve their chances of spawning in the river.

The Puyallup Tribe of Indians is continuing its successful steelhead broodstock program by releasing young steelhead from an acclimation pond in the upper White River.

“Acclimation ponds help ensure there are juvenile steelhead in the river each year to take advantage of the available habitat,” said Blake Smith, the tribe’s hatchery manager. The fish will be released at a pond on Huckleberry Creek, a tributary to the White River in the Puyallup watershed.

To help recover the declining run, the Muckleshoot and Puyallup tribes started the steelhead broodstock program eight years ago. Each year, the partners spawn up to 25 wild steelhead taken from an adult trap on the White River.

Up to 50,000 juvenile steelhead are produced annually at the Muckleshoot Tribe’s White River hatchery. This year will mark the first release of hatchery steelhead from the acclimation ponds.



Tribal and federal staff and volunteers collect steelhead eggs from the Skokomish River valley.

Tiffany Royal

Harvest Management

Salmon

Treaty Indian tribes and the Washington Department of Fish and Wildlife co-manage salmon fisheries in Puget Sound, the Strait of Juan de Fuca and nearshore coastal waters.

- For decades, state and tribal salmon co-managers have reduced harvest in response to declining salmon runs. Tribes have cut harvest by 80-90 percent since 1985.
- Under *U.S. v. Washington* (the Boldt decision), harvest occurs only after sufficient fish are available to sustain the resource.
- The tribes monitor their harvest using the Treaty Indian Catch Monitoring Program to provide accurate, same-day catch statistics for treaty Indian fisheries. The program enables close monitoring of tribal harvest levels and allows in-season adjustments.
- Tribal and state managers work cooperatively through the Pacific Fishery Management Council and the North of Falcon process to develop fishing seasons. The co-managers also cooperate with Canadian and Alaskan fisheries managers through the U.S./Canada Pacific Salmon Treaty.

Fraser Sockeye Run Avoids U.S. Waters



Tribal fishermen had high hopes for the 2014 Fraser River sockeye fishery, forecast to be more than 20 million fish.

The returning fish were the offspring of the record 2010 Fraser run of about 30 million fish.

Unfortunately, 96 percent of the sockeye were diverted into Canadian waters, out of reach for the nine tribes with treaty-reserved rights to harvest Fraser sockeye. The tribes are Jamestown S’Klallam, Lower Elwha Klallam, Lummi, Nooksack, Makah, Port Gamble S’Klallam, Suquamish, Swinomish and Tulalip.

This year’s diversion rate was one of the highest on record. Usually, about half of the sockeye swim around Vancouver Island through the Strait of Juan de Fuca, where tribal fishermen can harvest them when they enter U.S. waters. But by the end of August, Canadian fishermen had caught about five million Fraser sockeye, while in the States, tribal and non-tribal fishermen had caught about 275,000 fish.

Tribes will be requesting a declaration of natural disaster under the Stafford Disaster Relief and Emergency Assistance Act, and a fisheries economic disaster under the Magnuson-Stevens Act, which would provide services and financial assistance to fishermen.

Before the commercial fishery

opened in August, the Swinomish Tribe held a one-day ceremonial and subsistence fishery intended to harvest sockeye for both Swinomish and Tulalip tribal members to put away for the winter.

“The tribes take some of their quota to save for ceremonies, and to give to tribal members to cook or can,” said Lorraine Loomis, fisheries manager of the Swinomish Tribe. “We don’t have enough fish to get through the winter.”

The tribes were targeting 35,000 sockeye to be caught for the nine sockeye tribes’ ceremonial and subsistence use, but only 3,100 were caught.

Lummi Nation tribal members fished for Fraser sockeye with a traditional reef net in addition to their commercial purse seine and gillnet fleet.

“It’s an imitation of the seafloor, like a reef,” said Lummi fisherman Richard Solomon. “*Sxwole* is what our people called it.”

The net is suspended from two canoes while tribal fishermen watch for salmon to swim into the simulated reef and then lift the net.

“We have to relive the path,” said Lummi fisherman Troy Olsen. “Our journey back to the *sxwole*, our reef net, is in its infancy and we’re just now starting.”

Swinomish fisherman Landy James helps bring in Fraser sockeye during the tribes’ ceremonial and subsistence fishery.

Shellfish

Treaty tribes harvest native littleneck, manila and geoduck clams, Pacific oysters, Dungeness crab, shrimp and other shellfish throughout the coast and Puget Sound.

- Shellfish from ceremonial and subsistence fisheries are for tribal use only, and are a necessary part of their culture and traditional diet.
- Tribal shellfish programs manage harvests with other tribes and the state through resource-sharing agreements. The tribes are exploring ways to improve management of other species, including sea cucumbers, Olympia oysters and sea urchins.
- Tribes continue to work with property owners to manage harvest on non-tribal tidelands.

- Tribal shellfish enhancement results in bigger and more consistent harvests that benefit both tribal and non-tribal diggers.
- Shellfish harvested in commercial fisheries are sold to licensed shellfish buyers. For the protection of public health, shellfish are harvested and processed according to strict state and national standards.
- In 2013, treaty tribes in western Washington commercially harvested nearly 900,000 pounds of manila and littleneck clams; more than 2.6 million pounds of geoduck clams; more than 4 million oysters; 8.5 million pounds of crab; nearly 271,000 pounds of sea cucumbers and more than 247,000 pounds of shrimp.

Jamestown S’Klallam, Partners Start Hatchery



Tiffany Royal

Hatchery technician Nicolas Rosales rinses oysters before placing them in a floating upwelling system.

The Jamestown S’Klallam Tribe is developing its own shellfish hatchery to benefit both tribal and non-tribal shellfish operations in Puget Sound.

The tribe plans to raise shellfish and grow seed to sell, said Kurt Grinnell, Jamestown S’Klallam Tribe vice-chair.

The tribe leased the former Washington Department of Fish and Wildlife shellfish hatchery in Quilcene in late 2013 and started rearing 800 Pacific oysters in March.

The tribe is working in partnership with Troutlodge, a private salmon and shellfish aquaculture company, and Jones Farm, a shellfish farm on Lopez Island. The tribe and its partners are working together

because water chemistry has been an issue when sourcing seed from one location.

“We lower risk by partnering up with others,” Grinnell said.

The primary focus will be growing manila clams, geoduck and oysters from seed to adult, plus the algae needed to feed everything, as well as selling seed to others.

“We want to create our own larvae and broodstock here and provide seed to others,” Grinnell said. “We’ve had a need for something like this for a long time and to have it accessible to all the tribes. We’re going to make this work, we just have a long ways to go. There is such a demand for seed and everything we grow will be sold.”

Harvest Management (continued)

Marine Fish

Treaty tribes are co-managers of the marine fish resource. They work closely with the state of Washington, federal agencies and in international forums to develop and implement species conservation plans for all groundfish stocks in Puget Sound and along the Pacific coast.

- The Pacific Fishery Management Council, which includes the tribal and state co-managers, regulates the catch of black cod, rockfish and other marine fish. Halibut are managed through the International Pacific Halibut Commission, established by the United States and Canada governments. Tribes are active participants in season-setting processes and the technical groups that serve those bodies.

- The state of Washington, Hoh Indian Tribe, Makah Tribe, Quileute Tribe and the Quinault Indian Nation are working with the National Oceanic and Atmospheric Administration to develop research goals that look at changing ocean conditions and managing ocean resources.
- The tribes and state support ocean monitoring and research leading to ecosystem-based management of fishery resources. In 2013, the Quinault Indian Nation developed a nearshore ocean-monitoring system that uses sensors in crab pots to gather water quality information.

Halibut Hook Links Generations



Debbie Preston

Makah elder Jesse Ides examines a modern day halibut hook designed to test traditional fishing methods.

A fish hook has tied history, culture and the Makah community together in unexpected ways.

The *čibud* (pronounced “cha bood”), or halibut hook, became the subject of a student project during an internship with Makah Fisheries Management.

“I had a student, Larry Buzzell, come to me wanting to do a project that related to historical fishing methods,” said Jonathan Scordino, marine mammal biologist for the Makah Tribe.

Historically the hooks were made of both wood and bone. As the tribe gained access to new materials, they also made hooks from metal.

“The goal of the project was to test if the *čibud* was more selective for catching halibut than contemporary circle hooks when fished on a longline,” Scordino said.

Setting up the experiment was challenging because the study required 200 *čibud* to be made by hand. The Makah Cultural and Research Center

opened its exhibit preparation space for several weeks to allow community members to come in and help make the hooks.

Through trial and error, a group of volunteers learned it was better to bend the metal hooks cold rather than heat the metal.

Elder Jesse Ides (*Hush-ta*) watched as young people learned to make the hook he used in his youth.

“It’s terrific seeing them show the determination to make it and use it,” Ides said.

He recalled his father hauling canoes out to the halibut grounds to fish.

“You’d catch just halibut with that gear, nothing else,” he said.

“The *čibud* was known to not only fish selectively for halibut, but not catch too small or too big a halibut,” Scordino said. “From a management perspective, that’s exactly the size you want to catch so the older spawners remain and the young grow to be a harvestable size.”

Wildlife Management

The treaty Indian tribes are co-managers of wildlife resources in western Washington, which include species such as deer, elk, bear and mountain goats.

- Western Washington treaty tribal hunters account for a small portion of the total combined deer and elk harvest in the state. In the 2013-14 season, treaty tribal hunters harvested a reported 432 elk and 567 deer, while non-Indian hunters harvested a reported 7,246 elk and 27,448 deer.
- Tribal hunters do not hunt for sport, but for sustenance. Most do not hunt only for themselves. Tribal culture in western Washington is based on extended family relationships with hunters sharing game with several

families. Some tribes have designated hunters who harvest wildlife for tribal elders and others unable to hunt for themselves, as well as for ceremonial purposes.

- All tribes prohibit hunting for commercial purposes.
- As a sovereign government, each treaty tribe develops its own hunting regulations and ordinances for tribal members. Tribal hunters are licensed by their tribes and must obtain tags for animals they wish to hunt.
- Many tribes conduct hunter education programs aimed at teaching tribal youth safe hunting practices and the cultural importance of wildlife to the tribe.

Tracking Deer and Elk Predators: Bobcats, Cougars

Olympic Peninsula tribes are tracking bobcats and cougars to find out whether they are the primary predators of deer and elk on the peninsula. Until now, there hasn't been much scientific evidence supporting or disproving that theory.

Several tribes are putting radio-signal transmitting collars on cougars to better understand their home ranges, diet and other behavior. The Makah Tribe is the only entity collecting similar data on bobcats.

"There really has been no research done on bobcats in Washington," said Rob McCoy, Makah wildlife division manager. The tribe has been conducting research on cougars since December 2010 and started radio-collaring bobcats in January 2012.

"We have really good data on cougars and male bobcats," McCoy said. "We're working to get more females into the study to better understand reproduction and size of litters and survival."

The tribe now has four male and four female bobcats with collars.

When a collared cat makes a

kill, the radio signals show that it has stopped moving while it feeds. Biologists walk in and note the kill species.

"We're still gathering data, but right now, we just aren't seeing elk in the bobcat diet at all," McCoy said. "It's early in the study, but we aren't seeing a significant number of deer being killed by bobcats either. There is evidence they scavenge on deer opportunistically after a cougar kill or natural cause of death."

McCoy said that bobcats may actually survive on smaller prey such as mountain beavers, birds, rabbits, moles and mice.

Adult male bobcats have little overlap of home ranges as they are quite territorial.

"One of the things we want to know about female cats is whether their home ranges are larger or smaller and how territorial they are, comparatively," McCoy said.

Coupled with extensive research of elk and deer within their traditional hunting area, the tribe will use the research on cats to manage them in the future.



Rob McCoy, wildlife division manager for the Makah Tribe, applies eye-drops to a bobcat prior to fitting it with a radio collar.

Debbie Preston

Regional Collaborative Management

Puget Sound Partnership

The Puget Sound Partnership (PSP) was created in 2007 to recover Puget Sound's health by 2020. Tribes are actively involved in leadership and participation in a wide range of projects to improve the health of Puget Sound.

- U.S. Reps. Derek Kilmer and Denny Heck formed the Puget Sound Recovery Caucus in 2013. The congressional caucus coordinates action at the federal level and collaborates with stakeholders on efforts to improve the health of Puget Sound.
- The 2014-15 Action Agenda update focused on revisions to recovery activities that should begin or be completed within two years. New initiatives, priorities and strategies are not included in this update, but will be considered when substantial review and updating takes place in 2016.
- Tribal representatives are active in partnership efforts to protect salmon habitat. One approach seeks improved habitat protection through review and improvements to current regulatory processes.

Tribes Collaborate on Salish Sea Survival



Fisheries managers studying poor ocean survival of salmon are concentrating their research on juvenile fish and their preferred prey. Several tribes collaborated on studies in 2014.

The Tulalip, Nisqually, Port Gamble S'Klallam, Lummi, Swinomish and Sauk-Suiattle tribes are among the collaborators sampling zooplankton throughout the region.

Zooplankton and ichthyoplankton are the preferred prey for juvenile salmon. Researchers want to find out whether prey availability has changed in the Salish Sea during the critical period of juvenile salmon development, leading to poor growth and survival.

"This effort will fill critical knowledge gaps in understanding the lower levels of the marine food web that affect juvenile salmon," said Paul McCollum, director of natural resources for the Port Gamble S'Klallam Tribe. "The data will contribute to the development of ecosystem indicators that have already been demonstrated to greatly improve adult salmon return forecasting."

In Hood Canal and Admiralty Inlet, the Port Gamble S'Klallam Tribe has been conducting nearshore research and monitoring of juvenile salmon and forage fish, using acous-

tics, trawl and beach seine methods, as well as zooplankton sampling.

"The increasing inability in recent years to accurately estimate annual salmon returns is impacting tribal treaty rights and implementation of the U.S./Canada Pacific Salmon Treaty," said Terry Williams, commissioner of fisheries and natural resources for the Tulalip Tribes. "It also impairs the critical decision-making necessary to achieve salmon recovery goals and sustainable fisheries."

The Tulalip and Nisqually tribes are partnering on a study of juvenile salmon in the Snohomish and Nisqually river watersheds and adjacent nearshore and offshore marine areas.

The study will examine the entire community structure of competitors and predators, including plankton and other fish species. Smolt traps operate continuously on both rivers from winter through summer to collect timing, size and abundance data for out-migrating salmon. Both tribes also sample juvenile fish use of nearshore marine areas and pocket estuaries using fyke nets and beach seines.

This sampling data should allow researchers to identify the life stage, timing and locations where growth of juvenile salmon is limited.

Emmett O'Connell

Jed Moore, salmon biologist for the Nisqually Indian Tribe, takes zooplankton samples to better understand the food available to migrating juvenile salmon.

Ocean Ecosystem Management

The state of Washington, the Hoh, Makah and Quileute tribes and the Quinault Indian Nation work with the National Oceanic and Atmospheric Administration (NOAA) to integrate common research goals to understand changing ocean conditions and create the building blocks for managing these resources.

- In recognition of the challenges facing the Olympic Coast ecosystem, the tribes and state of Washington established the Intergovernmental Policy Council to guide management of Olympic Coast National Marine Sanctuary. Many of the research and planning goals established by tribes and the state mirror the recommendations of the U.S. Ocean Policy.

- Climate change and ocean acidification have been top priorities the past two years. Because of their unique vulnerability, coastal indigenous cultures are leaders in societal adaptation and mitigation in response to events driven by climate change.
- The tribes continue to work with the state of Washington and federal partners to respond to the findings of the state's blue ribbon panel on ocean acidification including prioritizing research to understand its effects on marine ecology and shared natural resources.

Tribal Environmental Protection and Water Resources Program



Tiffany Royal

Skokomish Tribe water quality biologist Seth Book measures the salinity of a water sample from Hood Canal near Hoodspport.

The Coordinated Tribal Water Quality Program was created by the Pacific Northwest tribes and the federal Environmental Protection Agency (EPA) to address water quality issues under the Clean Water Act.

- EPA's General Assistance Program (GAP) was established in 1992 to improve capacity for environmental protection programs for all tribes in the country. Many tribes are now participating in the pilot "Beyond GAP" project to build on the investments of the last 20 years by creating environmental implementation programs locally while supporting national environmental protection objectives.
- These programs are essential to combat the threats to tribal treaty resources such as declining water quality and quantity. In western Washington, climate change and urban development negatively affect water resources and aquatic ecosystems, and will get worse with a state population expected to rise by 1 million in the next 20 years.
- Tribal water quality resource program goals include establishing instream flows to sustain harvestable populations of salmon, identifying limiting factors for salmon recovery, protecting existing groundwater and surface water supplies, and participating in multi-agency planning processes for water quantity and quality management.

Regional Collaborative Management (continued)

Forest Management

Two processes, the Timber/Fish/Wildlife (TFW) Agreement and the Forests and Fish Report (FFR), provide the framework for an adaptive management process that brings together tribes, state and federal agencies, environmental groups and private forest landowners to protect salmon, wildlife and other species while providing for the economic health of the timber industry.

- Treaty tribes in western Washington manage their forestlands to benefit people, fish, wildlife and water.
- Reforestation for future needs is part of maintaining the healthy forests that are key to vibrant streams for salmon, and that enable wildlife to thrive.
- Forestlands are a source of treaty-protected foods, medicine and cultural items.
- A tribal representative serves on the state's Forest Practices Board, which sets standards for activities such as timber harvests, road construction and forest chemical applications. Tribes also are active participants in the FFR Cooperative Monitoring, Evaluation and Research Committee (CMER).

Upper Skagit Tribe Improves Elk Forage



Debbie Preston

Elk populations in the North Cascades have suffered as a result of degraded habitat. The Upper Skagit Tribe recently helped thin a forest and added mulch to the soil to improve forage quality.

The Upper Skagit Indian Tribe's natural resources department thinned and mulched forestland on Puget Sound Energy (PSE) property last fall to improve elk forage in the North Cascades mountains.

Degraded and disconnected habitat is one of the main causes of the decline in numbers of the Nooksack elk herd, which went from a population of more than 1,700 20 years ago to about 300 by 2003. Since then, tribal and state co-managers have improved elk habitat in the region. Annual population surveys indicate that the herd is showing signs of recovery.

"Elk need a corridor of habitat that is rich in forage to keep them from becoming nuisances in populated areas," said Scott Schuyler, natural resources director for the Upper Skagit Tribe.

PSE acquired the land from the Department of Natural Resources as part of the mitigation requirements of the 2008 relicensing agreement with

the Federal Energy Regulatory Commission for the utility's Baker River Hydroelectric Project.

A crew used chainsaws to remove hundreds of trees on about 3 acres of land and 1,500 feet of road. The trees, mostly small Douglas fir, were then put through a wood chipper to mulch the dry, rocky soil.

"We needed to remove enough of the canopy to let light in so grasses can grow," said Upper Skagit timberland services manager Robert Schuyler. "The trees we left can be harvested later for a commercial crop."

The mulched ground was seeded with grasses, clover and small burnet.

"There's no forage out here, it's all knee-deep salal, Oregon grape and sword fern, which elk don't eat," said Tony Fuchs, PSE wildlife biologist. "Once we get grasses and clover established, elk will find a better place to forage."

NWIFC Functions, Programs and Activities

Tiffany Royce



NWIFC fish pathologist Marcia House, left, and Lower Elwha Klallam Tribe hatchery manager Larry Ward discuss coho that returned to the hatchery in November 2014.

The Northwest Indian Fisheries Commission (NWIFC) was created in 1974 by the 20 treaty Indian tribes in western Washington that were parties to the *U.S. v. Washington* litigation that affirmed their treaty-reserved salmon harvest rights and established the tribes as natural resources co-managers with the state.

The NWIFC is an inter-tribal organization that assists member tribes with their natural resources co-management responsibilities. Member tribes select commissioners who develop policy and provide direction for the organization. The commission employs about 70 full-time employees and is headquartered in Olympia, Wash., with satellite offices in Forks, Kingston and Burlington.

The NWIFC provides broad policy coordination as well as high-quality technical and support services for its member tribes in their efforts to co-manage the natural resources of western Washington. The NWIFC serves as a clearinghouse for information on natural resources management issues important to member tribes. The commission also acts as a forum for tribes to address issues of shared concern, and enables the tribes to speak with a unified voice.

The NWIFC has coordinated the tribal Treaty Rights at Risk initiative that seeks to encourage the federal government to align its agencies and programs with salmon recovery goals and to lead a more coordinated salmon recovery effort. Tribes are calling on the federal government for assistance because it has both the obligation and authority to recover salmon and protect tribal treaty rights.

Habitat Services

- Coordinate policy and technical discussion between tribes and federal, state and local governments, and other interested parties.
- Coordinate, represent and monitor tribal interests in the Timber/Fish/Wildlife Forests and Fish Report process, Coordinated Tribal Water Resources and Ambient Monitoring programs. Analyze and distribute technical information on habitat-related forums, programs and processes.
- Implement the Salmon and Steelhead Habitat Inventory and Assessment Project.

U.S./Canada

Pacific Salmon Treaty

- Facilitate inter-tribal and inter-agency meetings, develop issue papers and negotiation options.
- Inform tribes and policy representatives about issues affected by the treaty implementation process.
- Serve on the pink, chum, coho, chinook, Fraser sockeye and data-sharing technical committees, and other work groups and panels.
- Coordinate tribal research and data-gathering activities associated with implementation of the Pacific Salmon Committee.

Quantitative Services

- Administer and coordinate the Treaty Indian Catch Monitoring Program.
- Provide statistical consulting services.
- Conduct data analysis of fisheries studies and developing study designs.
- Update and evaluate fishery management statistical models and databases.

Fisheries Management

- Long-range planning, wild salmon recovery efforts and federal Endangered Species Act implementation.
- Annual fisheries planning: developing pre-season agreements; pre-season and in-season run size forecasts; monitoring; and post-season fishery analysis and reporting.
- Marine fish management planning.
- Shellfish management planning.

Enhancement Services

- Coordinate coded-wire tagging of more than 4 million fish at tribal hatcheries to provide information critical to fisheries management.
- Analyze coded-wire data.
- Provide genetic, ecological and statistical consulting for tribal hatchery programs.
- Provide fish health services to tribal hatcheries in the areas of juvenile fish health monitoring, disease diagnosis, adult health inspection and vaccine production.

Information and Education Services

- Provide internal and external communication services to member tribes and NWIFC.
- Develop and distribute communication products such as news releases, newsletters, videos, photos and web-based content.
- Respond to public requests for information about the tribes and their tribal natural resources management activities.
- Work with state agencies, environmental organizations and others in cooperative communication efforts.



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