NWIFC News

Northwest Indian Fisheries Commission

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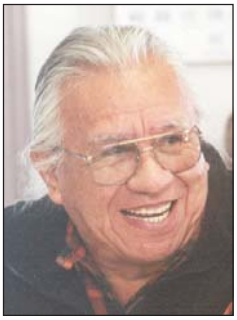
Inside:

Being Frank

Hatcheries Aren't Habitat



There's no question that hatcheries have a role to play in salmon recovery, but hatchery fish aren't wild fish, just like hatcheries aren't habitat.

Hatcheries are absolutely needed to support some wild salmon stocks. Without them, those fish would disappear. Hatcheries make sure we have fish to catch. If we didn't have hatchery salmon, no one would be fishing. Tribal treaty fishing rights would be meaningless.

Yes, hatchery fish are part of the answer to salmon recovery. Hatchery fish were never meant to replace wild fish, though, and we have to make sure that never happens. Only wild fish can carry us into the next century and beyond.

One of the main reasons hatcheries were built in the first place was to replace natural salmon production lost to dams, development, logging and other factors. But hatcheries can't really make up for the habitat we've already lost – and the habitat we continue to lose every day. All hatcheries do is hide the problem for a while.

Lost and damaged spawning and rearing habitat are the main reasons why wild salmon stocks have declined. If we want to fix the salmon problem, we have to fix salmon habitat. We have to protect it. Restore it. Buy more of it. Cherish it. We have to remember that even hatchery fish, once released, have the same habitat needs as a wild fish: lots of cool, clean water, diverse habitat with plenty of food, and access to and from the sea.

We have to go about fixing habitat like we're tackling the other big factors affecting wild salmon: harvest and hatcheries.

We have cut salmon harvests sharply over the past 20 years, in some cases as much as 90 percent. It's been hard, but we did it because it's the right thing to do. But no matter how much we cut harvest we can't make up for lost natural production.

We are reforming hatcheries to aid recovery of wild salmon while supporting sustainable fisheries. Four years and $20 million have been spent so far. We've come up with more than 1,000 recommendations for changes at state and tribal facilities. Some hatcheries will close; others will reduce production.

If we are serious about salmon recovery – and I can assure you that the tribes are dead serious – we have to get serious about protecting and restoring salmon habitat. It's the only way wild salmon recovery will happen.

In the meantime, we need the Endangered Species Act (ESA) to continue protecting Puget Sound chinook, Lake Ozette sockeye and Hood Canal summer chum, the three salmon stocks in western Washington that are listed as "threatened" under the act.

There's a good reason those fish are on that list: they don't have a good place to call home. If we don't do a better job of stopping habitat loss, a lot more salmon will be joining them on that ESA list.

Northwest Indian Fisheries Commission News

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Makah	360-645-2205
Muckleshoot	253-939-3311
Nisqually	360-456-5221
Nooksack	360-592-5176
Port Gamble S'Klallam	360-297-2646
Puyallup	253-597-6200
Quileute	360-374-6163
Quinault	360-276-8211
Sauk-Suiattle	360-436-0132
Skokomish	360-426-4232
Squaxin Island	360-426-9781
Stillaguamish	360-652-7362
Suquamish	360-598-3311
Swinomish	360-466-3163
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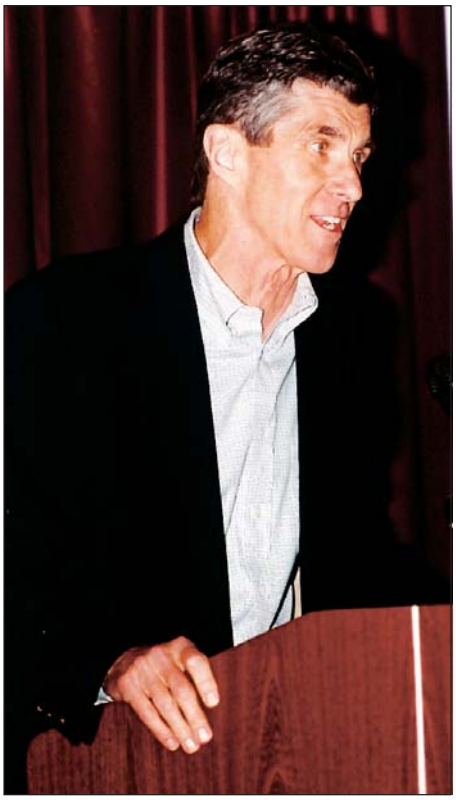
On The Cover: Mary Eastman, Quileute, separates the rough outer bark of the cedar tree from the smooth inner bark that she will use to make cedar hats. See stories on pages 4-5. *Photo: D. Preston*

Boldt Decision 'Stands For Justice'

Editor's Note: In celebration of the Boldt Decision's 30th anniversary, David Getches, an attorney central to the case's success, delivered the keynote address at NWIFC's annual meeting in May. Now the dean of the University of Colorado Law School, Getches is one of the country's foremost experts on tribal law.

"David is part of us," said NWIFC Chairman Billy Frank, Jr. during his introduction of Getches. "He is part of everything that we do in this family of Indian people, our coalition of all of us. He is part of what we do for the environment, for the salmon. He has given us so much of his time ... David, you bring us hope every time that we see you."

Following are excerpts from Getches' speech:



David Getches, dean of the University of Colorado School of Law, addresses the annual meeting of the NWIFC.

Photo: D. Preston

One of the first things I did [after getting involved with the case] was visit Frank's Landing on a foggy, damp day. It was a quietly busy place. There was a heap of fishing gear, a kitchen that smelled of strong coffee and was doubling as a conference room and an office. This was a place on a mission. This was a place that maintained a peace, but contained people who had a purpose.

On another trip, the people who picked me up took me directly to the hospital, where we found Hank Adams lying there with a bullet wound in his side. He was pained, but roundly cracking jokes.

We had to get started working on the case right away. Our goal was, first, to get the United States federal government to sue. It took years to accomplish that goal, but the U.S. did proceed. In hindsight, this was a major, major accomplishment. The tribes persuaded, cajoled and insisted that the U.S. come out and represent them in this very controversial case. Can you imagine John Ashcroft and Gale Norton taking up this case? This was a tremendous accomplishment back in the 1970s.

We all wondered throughout this period, were we going to be able to prove our case? There were lots of precedents from the Supreme Court supporting Indian fishing rights, going back to 1908, so it should be easy – but it wasn't easy.

Judge Boldt is something of a hero to us now, but we were deeply worried about Boldt in those days. He was tough, a right-wing type. But we didn't understand one thing about him that we should have, and that is that the patriotism in his character was linked to an ideal of national honor, and that included honoring treaties. We went to trial, and we went into a courtroom that seemed bigger than all outdoors. Across the room we had the Attorney General, Slade Gorton.

We were scared, but we were also buoyed by our clients, the Indian people who represented these tribes, and by the testimony of the witnesses who came from the ranks of the elders. They had a magical sprinkle of credibility they brought to the proceedings. The day the verdict came out, Feb. 12, Lincoln's birthday, 1974, what a gift it was to celebrate with the people who had made it happen.

It wasn't over even when it was over. We had to go up to the Tacoma Courthouse because the state had many motions for re-consideration of numerous aspects of the decision. When we got to the courthouse, it was ringed by demonstrators carrying placards and pickets. The judge was hanged in effigy. People shouted at us.

Here we are 30 years later. If we step back and ask, what is the broader enduring significance of the case, there is a lot to tell. First of all, it stands for justice; it's a re-ratification of all Indian treaties.

The law's not always fair. But we saw justice done in this case. That tough-minded judge in Tacoma stood up for justice — despite being hanged in effigy — for the rights of people who he didn't really know, who had no clout in his neighborhood, or his church, or his political party.

The Boldt decision has been the inspiration for peoples whose spirits and bodies were beaten down when they dared to fish or hunt, and who were naïve enough to think that their treaties actually meant what they said. The Boldt decision proved the importance of a single decision in sending out ripples that made a difference to all of Indian Country.

If the Boldt decision could give us one thing, let it be another generation of leaders like those who made it possible in the first place.

Growing Problems For Tribal Gatherers

As a young girl, Mary Eastman often went into the woods with her mother and other Quileute women to gather plants and cedar bark for traditional uses such as weaving baskets and hats. "We weren't very old, maybe four or five years old at the time, but my mother wanted us to learn how to harvest the plants so they would grow back and we would learn how to preserve them for later use," she remembered.

Eastman is now in her 60s, and the places where Indian people can gather culturally significant plants on the Olympic Peninsula are disappearing along with opportunities to pass on centuries-old knowledge.

"When I was young, we would go to different areas depending on the season. For example, we would go south to gather bear grass in the Lake Quinault area in the early spring months. That was also a good time to gather cedar bark because that's when it separates more easily from the tree," she said.

On Mother's Day, three generations of Eastmans gathered to strip cedar bark courtesy of private timberland owner Rayonier. Eastman brought her son Ryan, and his daughter, 8-year-old Mariah. For Eastman, it was a wonderful Mother's Day present. It was a day to pass along her knowledge of how to pull the cedar bark off in long strips and separate the rough outside bark from the smooth inner bark that is used for baskets, hats, clothing and crafts.

Ryan Eastman, Quileute, pulls a strip of bark from a cedar tree. Only a small portion of the bark is removed, which does not harm the tree. *Photo: D. Preston*

'I'm really thankful for the chance to gather cedar.'

– Mary Eastman
Quileute
Tribal Member

Bill Peach, Rayonier regional business manager, has been bringing small groups to a stand of ancient cedar near Kalaloch for five years. "The passing of knowledge from experts to beginners is one of the best things about it. I've learned as much as anyone else," said Peach. He credits Hoh tribal members Vi and Marie Riebe with teaching him the cultural significance of many forest plants.

"I'm really thankful for the chance to gather cedar. It's just gotten harder and harder to get to some of our spots," said Mary Eastman.

"Rayonier provides a good opportunity for tribal members. We appreciate that relationship and Bill Peach in particular," said Katie Krueger, environmental policy analyst for the Quileute Tribe's natural resources department.

Over the years, access to plants and trees for traditional uses has become increasingly difficult for tribal members. In fact, some make arrangements to strip cedar at local timber mills when a load comes in.

Access is not the only problem, however. Competition for forest plants has risen sharply in the past decade. A steady rise in demand by the floral industry for forest products has sent thousands of brush pickers into the woods in search of many of the same plants used by tribal people. Brush pickers are often unfamiliar with traditional methods of sustainable plant harvest. Many use machetes to remove the plants, preventing the plant from re-growing. Additionally, many pick illegally, stripping huge areas of forest that will take decades to heal. The illegal activity has become such a problem on public and private lands that many areas have been closed to everyone, including tribal members.

One bright spot is a Nisqually Tribe pilot program in Mount Rainier National Park that enables tribal members to gather within the park through a permit system administered by the tribe. *(See related story, next page.)*

"We hope Mount Rainier can serve as an example as to how other parks can operate," said Krueger. Quileute tribal members can gather in the Olympic National Forest (ONF) and on Washington Department of Natural Resources lands using a tribal permit system administered by the tribe's natural resources department. In the ONF, access to commercially valuable trees such as cedar or yew is negotiable.

"It can seem like a lot of paperwork to tribal members, but the benefit is that it shows other agencies the tribe can be self-regulatory," said Krueger. – *D. Preston*

Gathering Tradition Continues On Rainier

For centuries the Nisqually Indian Tribe depended on the land to provide them with food, medicine, and material for baskets. As more and more people moved into western Washington, however, traditional gathering places began to disappear. "The plants that we look for in the woods and in the prairies are as important to us as anything in our lives," said Joyce McCloud, an instructor with Northwest Indian College who has been gathering plants most of her life.

Under an agreement with Mount Rainier National Park, tribal members for the past few years have been able to gather traditional plants within the park boundaries, which had been off limits for almost a century. "Gathering plants is just as important as fishing for salmon, digging clams and hunting," said Georgiana Kautz, natural resources manager for the Nisqually Tribe.

When the tribe first discussed with park administrators the proposed gathering agreement, there were some worries that the tribe would want to harvest plants commercially. "Everything we take from the park we take only for ourselves; we don't sell anything," said Kautz. "We might trade a basket, but we aren't selling salal to flower stores."

'We want to come back next year and see the plants flourish.'

– Joyce McCloud
Nisqually
Tribal Member

"When I was first taught about plants, I was told to skip over the first patch of whatever I saw, and go straight to the next patch," said McCloud. "When I do start picking, I was also taught not to pick an entire patch, just a little bit here, and a little there. We want to come back next year and see the plants flourish."

While the national park isn't the only place Nisqually tribal members gather plants, it is an important place because some plants are only available in healthy numbers inside the park. "Even when Mount Rainier was off limits to us, we would gather plants any place we were allowed," said McCloud. "Having the mountain accessible once again gives us the opportunity to gather plants we can't really find anywhere else." Bear grass, western red cedar, devil's club, and pipissewa (a wild herb), among other species, are gathered by the tribe inside the park.

Under the agreement, the tribe set up a permit system that tracks who gathers inside the park and how much they collect. "Everyone has to come into the natural resources office and tell us what they're going up for and get a permit," said Kautz. In addition to the permit, gatherers also need to attach a tribal sticker on their vehicles and show their tribal identification cards before entering the park. "We regulate this closely," said Kautz. "We need to count the chinook, count the geoduck, and count the spruce."

At the end of the year the tribe and the park meet and go over harvest numbers. "We get together so we can be on the same page about what is going on in the park and to strengthen our relationship with each other," said Kautz.

– E. O'Connell

Appeals Court Rules Against Makah Whaling

The Makah Tribe's ability to exercise its treaty right to whale was dealt another setback in June when a federal appeals court ruled, for a third time, that the federal government must conduct an extensive environmental impact process before the hunt can continue.

The three-judge panel said that National Oceanic and Atmospheric Administration (NOAA) Fisheries must complete an extensive analysis that could take years to complete. NOAA Fisheries has already completed two environmental assessments that found no harm would result to the whale population from the tribe's hunt.

In addition, the court said the tribe must apply for an exemption from the Marine Mammal Protection Act (MMPA) before it can conduct another hunt. The tribe has harvested only one whale in nine years.

The ruling leaves the Makah with two choices: appeal the recent ruling to the U.S. Supreme Court, where a hearing is not guaranteed, or pursue the MMPA exemption and wait for the completion of the environmental impact analysis. No tribe has tried to obtain an exemption from MMPA.

The tribe believes their treaty right is being taken away by the ruling despite the court's assertion their decision doesn't interfere with treaty rights. John Arum, attorney for the tribe, argues that subjecting the tribe to the MMPA is in conflict with an amendment Congress made to the act which says that "Nothing in this act ... alters or is intended to alter any treaty between the United States and one or more Indian tribes."

Tribal officials are meeting to discuss their options. The gray whale was removed from the Endangered Species Act list in 1994 and numbers over 17,000, which is close to historic population levels. *– D. Preston*

On Their Way To Sea, Coho 'Call Home' To Squaxin Island Tribe

The Squaxin Island Tribe is using innovative technology to track juvenile coho as they make their way out to the ocean. "We know that in general salmon leave Puget Sound and head out into the ocean and return after a few years," said Jeff Dickison, policy analyst with the Squaxin Island Tribe. "We've never been able to track them with this level of detail."

The tribe will be implanting tiny transmitters into juvenile coho allowing researchers to track the young fish as they make their way out to the ocean. An array of acoustic receivers located south of the Tacoma Narrows Bridge will track the fish as they begin their ocean migration. "This is one of the first times anyone will get a close look at the behavior of individual salmon migrating in saltwater," said Dickison. "They move around, they go back and forth, they go to a lot of different places."

When a tagged smolt passes between a pair of receivers, its individual frequency is picked up, allowing it to be tracked for several hundred yards. "If these salmon stay south of the Tacoma Narrows for any length of time, we are going to be able to gather a lot of detailed information," said Dickison.

A weak hatchery coho run in 1999 convinced the Squaxin Island Tribe that they had to find out what happened to the juvenile salmon once they were released from the tribe's net pen facility in Peale Passage. South Sound hatchery coho returns were worse compared to already low runs Puget Sound-wide, and no one knew why. "It wasn't freshwater mortalities, these salmon are kept in saltwater netpens until they're ready to be released," said Dickison. "It was something that was happening out in the sound or out in the ocean."

> **'We've never been able to track them with this level of detail.'**
> *– Jeff Dickison*
> *Policy Analyst*
> *Squaxin Island Tribe*

Compared to earlier techniques of tracking salmon, such as coded wire tags inserted in the snouts of juvenile salmon, acoustic tagging is timelier and provides much more information. "With coded wire tags, you basically have two pieces of data: where the salmon was released and where it died, whether in a stream after spawning or after harvest," said Dickison. "But with acoustic tags, you can track many other aspects of salmon life in saltwater: for example, where a salmon might be feeding or how fast it travels through a particular area."

About 140 young coho salmon were implanted with acoustic tags by the Squaxin Island Tribe. *Photo: E. O'Connell*

Tiny acoustic tags broadcast a signal that can be picked up throughout South Puget Sound. *Photo: E. O'Connell*

The tribe's effort will be bolstered by the "Pacific Ocean Salmon Tracking Project," which has set up acoustic receivers along Johnstone Strait on the north end of Vancouver Island. The Canadian research effort has plans for expanding their array, possibly into the Strait of Juan de Fuca. "The small networks of acoustic receivers can be brought together, giving us a clear picture of how salmon use the ocean," said Dickison.

The unique geography of southern Puget Sound makes it a perfect place to put this new technology to use. "There is only one place for these fish to leave the South Sound, and that is through the Tacoma Narrows," said Dickison. "It's fairly easy for us to gather information on a large group of salmon."

The acoustic tracking program, backed by Hatchery Reform funds, is expected to lead to more effective hatchery operations that are better integrated with the South Sound ecosystem, said Dickison. "Having more information on how these juvenile hatchery coho interact with the natural environment can suggest better ways to run the net pen operation," he said. – *E. O'Connell*

Tribes Trench Path For Stranded Salmon

More than 2,000 young salmon died in early June when the Clallam River was unable to breach a sand spit that blocked fish from migrating to the Strait of Juan de Fuca. To allow remaining trapped fish to migrate, the Lower Elwha Klallam and Makah tribes took the unprecedented step of trenching a path through the spit to the strait.

With no snowpack to feed it, the Clallam River is heavily influenced by rainfall. By the time summer rolls around, the river's flow has been reduced to a trickle and it is unable to maintain an avenue to the strait. Additionally, the watershed's geology doesn't store water well. Normally, the river mouth closure happens in late June, after fish have left the river.

"This was an extreme situation. Chum populations in the Strait of Juan de Fuca are so fragile that losing even a couple hundred fish in an event like this would be huge," said Jeff Shellberg, Makah Tribe fisheries hydrologist. The tribes paid for the trenching that required an emergency permit from the Washington Department of Fish and Wildlife (WDFW).

Shellberg began receiving reports in late April that fish were being stranded on the river's banks. By April 10 the river's mouth was closed, the earliest anyone can remember.

"We got almost no rain in May, so the river mouth never re-connected to the ocean. It appeared there were many salmon bunched up waiting to get out and the river just wasn't breaching the spit itself," said Shellberg. A joint snorkel survey by the tribes and WDFW confirmed thousands of fish were trapped. Shellberg and Mike McHenry, habitat biologist for the Lower Elwha Klallam Tribe, sought permission to excavate the beach berm. The tribes and State of Washington are co-managers of the fish resource.

The Makah and Lower Elwha Klallam tribes obtained permits and paid a contractor to breach a sand spit trapping fish in the Clallam River.

Photo: J. Shellberg, Makah Tribe

Thousands of chum and coho salmon and steelhead exited the river after the trench was finished during the highest tide of the year.

"I'm just sorry we didn't get it done in time to prevent the fish kill that happened two days before," said McHenry.

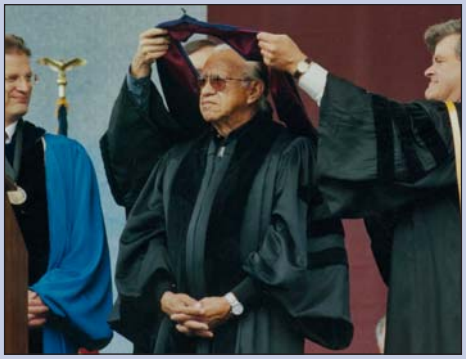
– D. Preston

Chairman Frank Receives Three Honorary Degrees

After decades of dedicated service to the legal rights of the treaty Indian tribes, the environment and to consensus building between tribal and non-tribal governments, NWIFC Chairman Billy Frank Jr. was recently conferred an honorary doctorate degree by the University of Puget Sound, and two master's degrees by The Evergreen State College.

In submitting Frank's nomination to the faculty senate and board, the university's honorary degree committee cited Frank's "outstanding leadership in the movement to affirm tribal rights to fish and to restore salmon habitat," and stated that his "commitments to environmental responsibility, human rights, and civic discourse have inspired and challenged us all."

Frank was honored with two honorary degrees from The Evergreen State College. The Master's in Public Administration and Master's in Environmental Sciences degrees were presented by college President Les Purce, who referred to Frank as "a longtime friend of the college." Frank had served on TESC's board of trustees for seven years, and helped establish the college's longhouse and tribal governance program.



Billy Frank Jr. receives an honorary doctorate degree from the University of Puget Sound. *Photo: Courtesy UPS*

In accepting the degrees, Frank emphasized the importance of education in the pursuit of understanding and team spirit between Indian and non-Indian people in the ongoing pursuit of justice and meaningful quality of life.

– S. Robinson

'We've Got To Take Care Of Our Elders'

As brilliant sunshine gleams off the water, a roaring alder fire roasts king salmon to perfection. An outdoor barbecue to welcome in the weekend? Yes, but not just any barbecue: every Friday, Lummi Nation fisheries commissioners supply fish for elders at the tribe's Little Bear Creek retirement center and assisted living facility.

"We've got to take care of our elders," says Gordon Wilson, who has been cooking salmon for community members over the course of three decades.

Today, they'll cook about 300 pounds of king salmon caught in a tribal test fishery in the Nooksack River. Test fisheries are conducted to determine whether fish are returning in adequate numbers to allow harvest by tribal fishermen. Every Friday, members of the Lummi Fisheries Commission volunteer to cook salmon taken in these test fisheries.

The tradition has quickly gained popularity among elders. While attendance varies, it is common to find more than 50 elders feasting on the fish. According to Little Bear Creek staff, the numbers are growing every week.

"When they hear we're having barbecued salmon, they come from all over the reservation – busloads of them," said Wilson. "It's a treat for our people."

Randy Kinley prepares salmon for a weekly barbecue that the Lummi Nation hosts for the tribe's elders. *Photo: J. Shaw*

Community events have always featured salmon, and Wilson also cooks around 2,500 pounds of fish for the Lummi Nation's Stommish Festival each summer.

Supplying traditional food is not just healthy, say commissioners, it is a tribal custom to deliver salmon to the tribe's most senior members.

"This is probably the healthiest food they can eat," said commissioner Randy Kinley. "It's all about providing for the elders."

Besides an opportunity to provide nutritious food, the outdoor barbecue provides a gathering place for retired tribal fishermen to share stories, companionship and memories.

"It's good for their self-esteem, too – it brings back memories of the way things used to be," added Terry Hillaire, also a Lummi fisheries commissioner who volunteers to help cook. – *J. Shaw*

Generations

William We-ah-lup smokes salmon and roe (eggs) on the beach at the Tulalip Indian Reservation, circa 1906. He was believed to be 100 years old when the photo was taken. *Photo: Tulalip Tribes*

Quinault Bear Study Aids Management

The black bear figures prominently in Quinault Indian Nation (QIN) culture. In the past, QIN members would travel from the Olympic Peninsula to as far as The Dalles, Oregon, to trade items at a large spring gathering of many tribes. QIN members traded black bear meat, hides, as well as tools and art created from the bear which were prized by other tribes, according to Justine James, QIN tribal member and cultural specialist.

To this day, the bear retains a special place in QIN culture and life. In fact, the nation's school sports teams are called the Chitwins, the Quinault name for bear.

With thousands of acres of good bear habitat on the nation's lands, the numbers of bears have flourished to the point where they have begun to cause a problem. The bears cause damage estimated at more than $1 million each year to commercial trees owned by QIN and individual tribal landowners.

Black bears are omnivores, meaning they will eat almost anything ranging from plants to small rodents as well as young elk and deer. In early spring when food supplies are most limited, one of the bear's favorite foods is the inner bark layer of young conifer trees. While satisfying a need for carbohydrates, the damage caused by the bear to get at the bark often kills the tree. In areas of high bear populations, tree damage can become severe.

The QIN has started a multi-year study of bears on its lands to better assess numbers and habits. For the study, bears are trapped in culvert traps, or are stalked and darted with a tranquilizer. One of eight volunteer veterinarians then surgically inserts a transmitter in their body cavity. The 4-inch-long, torpedo-shaped radio allows wildlife biologists to track the bear's movements. "This will allow us to determine home ranges and feeding patterns. We also want to see if bears and elk are present at the same time on the prairies during elk calving season. We have concerns that the black bears may be preying on elk calves," said Grover Oakerman, QIN wildlife biologist. The ongoing study is funded by the QIN.

Leroy Black, Quinault, holds an intravenous drip for veterinarian Karen Hook while she inserts a radio transmitter in a black bear's stomach cavity with assistance from Scott Harris, tribal wildlife technician. *Photo: D. Preston*

The nation has taken several steps to try to minimize the bear damage to trees including providing feeding stations containing a kibble made especially for bears. The stations have helped, but only in limited areas because of the numbers of bears and the size of the reservation.

To further reduce bear damage the QIN has authorized pre-approved QIN members to guide a limited number of non-Indian bear hunters on the reservation. "This is a very controlled hunt," said Oakerman. "The non-tribal member bear hunters will be screened and must hunt with a designated QIN guide. We are trying to reduce bear damage in very specific areas by removing bears from high damage sites. We provide maps showing where bear damage occurs and encourage the guides to hunt in those places." Hunting is under way this spring; another hunt is planned for this fall. – *D. Preston*

Biologists Track Quinault Elk Herds

To better manage the elk population on tribal lands, the Quinault Indian Nation (QIN) has embarked on a new phase of an ongoing study that will provide more detailed data about elk herd populations, their overall health and habitat needs.

As part of the study, an 8-inch, bullet-shaped radio transmitter is inserted in a captured elk's stomach by way of the mouth while the animal is sedated. Blood is drawn for health analysis and a tooth removed to determine the animal's age.

More than 40 elk in different herds are being equipped with transmitters as part of the project. "This effort gives the QIN a more complete picture of elk population size, herd numbers, harvest rates, natural morality rates, migration timing, home ranges and identification of critical habitats such as calving areas," said Grover Oakerman, QIN wildlife biologist.

The ongoing study is funded by a $75,000 Bureau of Indian Affairs grant and QIN. Along with 13 QIN volunteers and staff, the Washington Department of Fish and Wildlife provided 11 experienced volunteers that are members of the Kitsap Bow Hunters. In addition, biologists from the Makah Tribe and the Northwest Indian Fisheries Commission have assisted with the project. – *D. Preston*

Ancient Oysters May Help Restore Native Populations

The Squaxin Island Tribe is looking at centuries-old oyster shells to find clues about what Olympia oysters looked like before they almost disappeared earlier this century.

"The size and character of these ancient Olympia oyster populations is a big mystery," said Brian Allen, Squaxin Island tribal shellfish biologist. "Were Olympias a different size? Were they shaped different? What can this tell us about natural oyster reef communities? These are important questions if we want to restore self-sustaining populations of Olympias."

The oyster shells, which are between 500 and 1,000 years old, were found in a "midden" or a deposit of shells at an ancient site on Eld Inlet. A variety of environmental conditions, from timber mill effluent to competition from invasive species, as well as overharvest severely depressed Olympia oyster populations. But, the tribe has been working in recent years to restore the native oyster.

"We have always depended on Olympia oysters," said Jim Peters, the Squaxin Island Tribe's natural resources director. "We now have a unique opportunity to look back in time to see what oysters were like and compare them with some populations we're trying to recover."

In addition to looking at how Olympias might have changed, the tribe is also ramping up its research of small Olympia populations on Squaxin Island. Tribal researchers are measuring Olympias and assessing their habitat. "This kind of baseline data, from water quality to things as simple as growth patterns on different beaches, is important when we're thinking about restoration," said Allen.

'Finding out how Olympias evolved and survived for centuries is one of the best ways we can restore them.'

– Jim Peters
Natural Resources Director
Squaxin Island Tribe

"Olympias used to be the single most important shellfish in our diet," said Peters. "They were everywhere. We're working to make them a major food source again."

Tribal Shellfish Biologist Brian Allen measures Olympia oysters on Squaxin Island. *Photo: E. O'Connell*

The tribe is also experimenting with "shell strings" to find out how and when Olympia oysters reproduce. Shell strings are hung like Christmas popcorn between the legs of small steel tripods.

"Olympia oysters, unlike other oyster species, retain fertilized eggs in a brooding chamber for a few weeks until the young are released into the water," said Allen. Larval oysters move with the tide until they settle on a hard surface, or "cultch."

Allen suspects the type of cultch a juvenile oyster attaches itself to goes a long way to determining its success. Japanese Pacific oyster shell is a common cultch for oyster culture, but may not be the best choice for Olympia oysters. "Olympias evolved growing on Olympia oyster shells," said Allen. "We think using either actual Olympia shells, or something that is pretty close, will lead to greater success when attempting to restore oyster reefs."

"Finding out how Olympias evolved and survived for centuries is one of the best ways we can restore them," said Peters. "The more we know about Olympias, the better we can ensure that the small populations of Olympias will continue their comeback." *– E. O'Connell*

Olympia Oysters Making Comeback

Olympia oysters are slowly making a comeback in lower Hood Canal. The once-abundant oysters – western Washington's only native oyster – are close to flourishing at a couple sites within the Skokomish River estuary.

In 2002, the Skokomish Tribe planted Olympia oysters in plots throughout the Skokomish River estuary. The plan was to reintroduce the once-plentiful species to Hood Canal. Two years later, that effort is showing some signs of success.

Olympia oysters. *Photo: D. Friedel*

"We're seeing good survival and good growth of Olympia oysters at some of our sites where we have reintroduced the species," said Eric Sparkman, shellfish biologist for the Skokomish Tribe. "Our main goal is to bring back the Olympia population to the point where they are successfully reproducing and repopulating the area. And while we are seeing some success, that overall goal will still take some time."

A victim of western expansion, the Olympia oyster has all but disappeared in Puget Sound. In the mid-1800s, demand throughout the West for the tasty shellfish was so great that the Olympia oyster population was nearly wiped out by over-harvest. To keep up with the demand for oysters, the ever-growing industry began importing larger Pacific oysters, which quickly took over cultivated beds once home to Olympia oysters. As western Washington continued to grow, development and industries – such as pulp and paper mills – also contributed greatly to the decline of the Olympia oyster populations.

Indian tribes in western Washington have always valued the Olympia oyster. The Olympia was not only an important source of food for the coastal Indians in the area, but the oyster also was a valuable trading item.

Although far from being recovered, the Skokomish Tribe is optimistic that further work can help bring back an Olympia oyster population that can be rebuilt to support tribal and non-tribal harvests. Harvesting Olympia oysters is currently prohibited.

The brood – or parent – oysters for the Skokomish Tribe's project were collected from beaches along Hood Canal and spawned at a state shellfish laboratory in 2002.

In addition to the Skokomish Tribe, the Lummi Nation, Suquamish, Squaxin Island and Jamestown S'Klallam tribes are working with others to help restore Olympia oysters to Puget Sound's beaches.

"Going in, we knew Olympia oysters could survive in the area because they're native to this region," Sparkman said. "But we weren't sure if they could repopulate the area. It's looking good, though. Not every oyster lived, but a number of them did, and some of them appear to be reproducing." – *D. Friedel*

Geoducks OK, Spill Effects Linger

Geoduck clams near an Indianola beach, where thousands of gallons of oil washed ashore earlier this year, are safe to eat, but the harvest of other shellfish in the area remains prohibited. The state Department of Health and the Suquamish Tribe reopened the offshore tract of geoduck clams to tribal harvest on April 1.

"We knew much of the intertidal area and the shellfish in that area would be affected by the oil spill, but we weren't sure what the effects would be offshore where the geoduck tract is located," said Tom Ostrom, biologist for the Suquamish Tribe. "We suspected there wouldn't be any contamination, and tests confirmed that the geoduck tract is clean and the clams are safe to eat."

Harvesting of geoducks and other shellfish at the Indianola beach had been prohibited since Dec. 30 of last year. That's when about 4,800 gallons of oil spilled into Puget Sound at Point Wells in Edmonds. The tide pushed a large portion of the heavy bunker oil across the sound, where it washed up along the Suquamish Tribe's sacred and pristine estuary known as Doe-kag-wats, which means "place of deer."

While the geoduck tract – located about 200 yards offshore in 18 feet of water – has been opened, the beach still remains closed to the harvest of manila clams and cockles. Tests continue to show signs of contamination in both species, said Ostrom. "We will continue to monitor the beach sediment and shellfish, and work with state and federal agencies on determining when shellfish are once again safe to eat," Ostrom said. "It's hard to say when shellfish are going to be able to be harvested. It will take some time for Mother Nature to completely clean the beach and estuary." – *D. Friedel*

Amphibians Tell Environment's Health

Amphibians such as frogs and salamanders lead double lives, moving in and out of water. Even the word "amphibian" comes from a Latin term meaning "double life." Wetlands along the Tulalip Reservation are a veritable treasure trove of these creatures.

From tree frogs to salamanders, a host of amphibians rely on wetlands around the reservation for survival. Yet relatively little is known about the animals living here. How many frogs populate the ponds? How many salamanders slink among the reeds? The answers to these and other questions will offer crucially important information for environmental planners – and a new study by the Tulalip Tribes aims to provide those answers.

Mike Sevigny, a wildlife biologist with the Tulalip Tribes, peers into a dish of amphibians during a series of surveys on the tribe's reservation near Marysville. *Photo: J. Shaw*

"The main reason we're doing this study is to collect baseline data," said Mike Sevigny, a wildlife biologist with the Tulalip Tribes. "That way, if we come back and study this area a few years down the road and things have drastically changed, it may give us some indication of what's been happening in the environment."

Since February, crews from the Tulalip Tribes have been researching four different wetlands on the tribes' reservation. They search for amphibian eggs, collect samples of adult animals, track vegetation distribution patterns and measure water quality indicators. This information will be combined into a careful biological assessment of Tulalip wetlands.

Primarily, that involves searching for masses of frog and salamander eggs. Many amphibians lay hundreds of eggs at a time in large clusters, which Tulalip researchers find and mark, keeping track of numbers, egg health and other indicators of breeding activity. To date, tribal researchers have counted egg masses for three different amphibians: the Pacific tree frog, one of the smallest (but loudest) amphibians in the Pacific Northwest; the red-legged frog; and the northwest salamander.

"We know that other amphibians live here, too. We've trapped adult long-toed salamanders and rough-skinned newts," said Sevigny. "But chances of finding eggs from these species are slim to none, since they lay only a single egg in leaf litter."

While it's impossible to draw many firm conclusions with just a year's worth of data, the surveys have already borne fruit in several ways. First, scientists are noting any mutations they discover, which may be a sign of environmental changes. So far, they've documented six tail mutations suffered by red-legged frog tadpoles in just one of the wetlands.

"It's a minor mutation – a bent or forked tail – but it's definitely a mutation," said Sevigny. This might indicate that the embryo was damaged during development somehow, perhaps due to environmental changes. Tracking mutations, even minor ones, can provide clues about environmental conditions. In addition to climactic changes, pollution and other forms of environmental damage can hurt amphibian development.

Additionally, the Tulalips are taking stock of vegetation and water quality data, information that will help scientists understand why animals prefer one area over another. Most of the studied wetlands are bordered by some type of forest, and sampling will help determine what type of habitat amphibians use and why.

Sampling also turned up one exotic find: an oriental weather fish. This eel-like species not native to the area was found in Tulalip Creek below the tribes' Bernie Kai Kai Gobin Salmon Hatchery. Only one viable population of this fish, likely an aquarium pet that was released, is known to exist in Washington. Sevigny speculates that Lake Weallup, which feeds into Tulalip Creek, may be home to a second viable population; this study aims to confirm that.

The project is funded by a grant from the federal Environmental Protection Agency. – *J. Shaw*

Mountain Goat Habitat Focus Of Tribal Study

Every year, heavy snow forces North Cascades mountain goats on Gamma Ridge to descend from their high winter peaks near Darrington.

Then they disappear.

For years, no one knew where the animals were going. Now, the tribal and state co-managers of Washington's natural resources are performing a groundbreaking study that will answer important questions about the region's goats, with a view to protecting herds like those on Gamma Ridge.

Key to the study is a comprehensive habitat model that will be essential for goat recovery. The Sauk-Suiattle Indian Tribe is pioneering development of this new model.

"No one has done habitat modeling for the goats' winter ranges before," said Doug McMurtrie, environmental director for the Sauk-Suiattle Tribe. "We need to know as much information as possible about mountain goat habitat in order for our studies to be effective."

The habitat model, which the Sauk-Suiattle Tribe is working on in conjunction with Western Washington University, will be especially valuable for planning herd recovery. While environmental models have been developed in the past, none has covered the animals' all-important winter habitat.

"The habitat modeling can be useful in a number of different ways," said Cliff Rice, wildlife biologist with the Washington Department of Fish and Wildlife. "Having a good habitat model, especially one that delineates between summer and winter habitat, will help in determining impacts of human activity, from hiking trails to snowmobiling to timber harvest. It will give us a better idea of how to plan for that activity so it has minimal impact on the goats."

'Culturally, the mountain goat has always been important to us.'

– Jason Joseph
Chair
Sauk-Suiattle Tribe

Tribal and state efforts to track the animals using global positioning systems will enhance the model's effectiveness. Currently, the co-managers track about 24 radio-collared animals in this fashion; this summer, an additional 20-some animals will be captured and collared.

The Sauk-Suiattle Indian Tribe has teamed up to protect mountain goat populations in Washington. *Photo: D. Preston*

Already, the radio collars are yielding interesting information. The co-managers were able to track one goat as it traveled from one spot in the Goat Rocks Wilderness south of Mt. Rainier to Mt. Adams in one day, a trip of about 20 miles. Researchers say there seems to be quite a wide variation in how animals deal with winter. Some animals don't change their range at all seasonally; others move considerable distances.

Though there is a great deal of variance in how different herds respond to the seasons, knowing what type of habitat goat herds select at what times of year will be invaluable in terms of land-use planning.

"Culturally, the mountain goat has always been important to us," said Jason Joseph, chairman of the Sauk-Suiattle Indian Tribe. "We're taught by our elders to think seven generations into the future, and this important scientific work will help us preserve the goat seven generations down the road."

In conjunction with the co-managers, a host of stakeholders are working together on a slate of goat recovery projects, including:

- Expanding tracking and radio collaring efforts; and
- Hiring a new, full-time goat biologist for the Sauk-Suiattle Tribe, a process that will be completed in September.

Scientists and tribal leaders hope that the data these efforts gather will reveal where goats like those in the Gamma Ridge herd go and why.

"Answering these questions is crucial to our understanding of what mountain goats need to survive, and the answers will help us protect them over the long term," said Joseph. *– J. Shaw*

Suquamish Tribe Studies Interaction Between Hatchery, Wild Salmon

Mixed in a seine net with a large haul of shrimp and sticklebacks swims a juvenile chinook salmon. "Here's what we're looking for," says Paul Dorn, salmon recovery coordinator for the Suquamish Tribe. After scooping up the small fish, Dorn waves a wand over the salmon and the wand beeps, indicating the fish has a metal coded wire tag in its nose. "It's probably a hatchery fish, all right."

The tag tells Dorn that the chinook salmon was bred in one of western Washington's salmon hatcheries. To better understand how hatchery salmon, wild salmon and other marine life are interacting in the sound's nearshore environments, the Suquamish Tribe has been seining several beaches throughout Kitsap County. The project – funded by federal Pacific Coastal Salmon Recovery funds – will help the tribe manage fisheries and hatcheries.

The project involves measuring all the sea life captured in the seine net, as well as weighing all chinook salmon. The tribe is checking the health of marine life, particularly salmon and fish that salmon eat, such as sand lance, surf smelt and herring. The tribe also is documenting how long each species stays in a particular area.

"We need to understand how salmon are using the nearshore environment and what food resources are available to these fish to help us make decisions on how to adjust our hatchery management schemes, land use regulations and habitat projects," Dorn said. "We want to make sure our efforts to help salmon are not actually harming them."

In 1999, Puget Sound chinook salmon were listed as "threatened" under the federal Endangered Species Act. Since then, the Suquamish Tribe has been adjusting its hatchery operations to help bring back abundant salmon populations without harming fragile wild salmon stocks. The effort is known as Hatchery Reform, and the project's goal is to help recover and conserve naturally spawning salmon populations and support sustainable fisheries. The seining project also will help monitor Pacific Coastal Salmon Recovery nearshore projects and provide vital information that will be used in shoreline management plans and other planning processes.

Aaron Tanodra, Suquamish Tribe hatchery technician, helps pull a beach seine ashore. *Photo: D. Friedel*

Information gathered from the project will help the tribe coordinate the release of juvenile hatchery salmon. Releasing the hatchery fish at certain times of the year will eliminate the possibility that juvenile hatchery-reared salmon will compete for food and habitat with young wild salmon.

So far, the beach-seining project has netted salmon that spawned in the Nisqually, White, Skagit and Green rivers, as well as from Miller Bay near the Suquamish Tribe's Port Madison Indian Reservation. The tribe operates the Grover's Creek Hatchery near Miller Bay and several salmon rearing ponds in Kitsap County. The tribe releases about 3 million hatchery chinook salmon annually.

Along with the Suquamish Tribe, the City of Bainbridge Island, the Washington Department of Fish and Wildlife, Liberty Bay Foundation, Friends of Miller Bay, Trout Unlimited and volunteers from Kitsap communities are involved in the project.

"The nearshore environment is extremely important for salmon," Dorn said. "By painting an accurate picture of the nearshore, we can better understand how hatchery and wild salmon are interacting with one another and other marine life." – *D. Friedel*

Paul Dorn, salmon recovery coordinator for the Suquamish Tribe, far left, and volunteers sort through a beach seine. *Photo: D. Friedel*

Restoring A Watershed

Port Gamble S'Klallam Tribe Key In Efforts To Repair Dosewallips River System

Along a path under the Highway 101 Bridge at Brinnon, sculptures of salmon line the walkway as if they are making their way up the adjacent Dosewallips River. The chiseled fish depict the return of spawning salmon that annually make their way back to the river – an event the Port Gamble S'Klallam Tribe is determined to help keep happening.

Salmon sculptures line a walkway along the Dosewallips River. *Photo: D. Friedel*

After three years of studying the lower reach of the Dosewallips River and mapping habitat features throughout that portion of the watershed, the tribe's completed analysis will be used as part of a habitat restoration project on the river this summer. As a member of the Dosewallips Estuary Restoration Team, the tribe identified restoration opportunities throughout the lower stretch of the river and determined what enhancement projects would benefit salmon and other wildlife that use the watershed.

Along with the tribe, the Dosewallips Estuary Restoration Team is made up of representatives from Washington Trout, the Hood Canal Coordinating Council, Washington State Parks, Washington Department of Fish and Wildlife, the U.S. Forest Service, Jefferson County, and Brinnon residents.

Not only did the tribe assess the river habitat, it also helped write a successful grant proposal for the restoration project. The Port Gamble S'Klallam Tribe also secured funding from the Northwest Straits Commission for a number of educational signs that will be placed along the Dosewallips, the second largest river on Hood Canal.

"We want to fix a number of problems that over the years have taken a toll on salmon that use this river," said Ron Charles, chairman of the Port Gamble S'Klallam Tribe. "The goal is to rebuild this portion of the river system and restore the watershed in a way that will benefit not only salmon, but shellfish and wildlife."

Throughout the last century, logging practices and dams have wreaked havoc on the lower stretch of the river, which is important spawning and rearing habitat for salmon and trout. Puget Sound chinook and Hood Canal summer chum – both listed as "threatened" under the federal Endangered Species Act – use the river. Populations of coho and pink salmon, along with steelhead and cutthroat trout, are also found in the Dosewallips.

To reverse some of the damage, the restoration team plans to remove some small dikes in the estuary and replace non-native plants with native species. The restoration team also is recommending the purchase of about 90 acres of riparian and floodplain habitat upstream of the mouth of the river. The acquisition – led by Jefferson County and the Jefferson Land Trust – would permanently protect important salmon spawning habitat and elk habitat.

"Repairing this river system will go a long way toward helping threatened salmon stocks, such as chinook and summer chum," Charles said. "The shellfish and elk populations in this watershed are thriving, and we want to see the same from the river's salmon populations." – *D. Friedel*

Members of the Dosewallips Estuary Restoration Team discuss restoration work that will take place along the river this summer. *Photo: D. Friedel*

On The Puyallup River

Steelhead Returns Hit Record Low

Steelhead returns to the Puyallup River are so low that the Puyallup Tribe of Indians may have to put the stock on life-support.

"Returns have gotten worse every year for the past five years," said Russ Ladley, resource protection manager for the tribe. Five years ago surveyors spotted over 1,700 steelhead in the Puyallup system. But in 2001 that number dropped to just over 1,000 and then under 300 last year.

"Last year we saw the worst returns in 60 years, and so far this year, we're seeing returns half that," said Blake Smith, Puyallup tribal enhancement manager. "We can't just cross our fingers and hope that things get better."

To combat the worsening trend, the tribe hopes to convert an old trout hatchery to raise steelhead, boosting their numbers until the mystery of their decline can be solved. The proposed hatchery is different from other area steelhead programs because it would use fish from the Puyallup system as broodstock. "Steelhead that are native to the Puyallup system are specially adapted to surviving here," said Smith. Recovery programs like these are a common tool to boost critically low salmon runs.

The tribe doesn't plan on keeping the hatchery open indefinitely. "Once steelhead are returning in strong enough numbers and can take care of themselves, we would shut down the hatchery," said Smith. "It's not our intention to have this hatchery up and running forever."

"When so few steelhead return to spawn, there's a danger that they won't be able to sustain themselves," said Smith. "For example, steelhead returning to some streams might not be able to find other fish to mate with."

Puyallup tribal personnel measure steelhead returning to the Buckley fish trap on the White River. *Photo: E. O'Connell*

Because the treaty and non-treaty steelhead harvest has been almost non-existent for the past eight years, managers suspect an unknown environmental factor is at hand. "Survival rates for both wild and hatchery steelhead have fallen dramatically over the last 15 years. At this point we don't even know whether the factors responsible are of marine or freshwater origin," said Ladley.

"No one has a specific reason why steelhead should be returning in such low numbers, but the lack of investigative research suggests that any answers are unlikely anytime soon," he said. "Hatchery supplementation is not the final solution, but it may buy us additional time.

"In recent years, improved marine survival has benefited runs of other salmon species, but not steelhead," said Ladley. "Why steelhead populations have not responded in similar fashion remains an enigma." – *E. O'Connell*

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