Northwest Indian Fisheries Commission

NEWS

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Inside:

Being Frank

Treat Water As Precious Resource

By Billy Frank Jr.
NWIFC Chairman

It is time for legislators to listen a little less to special interests, and a little more to what is right. Legislation that arises on the hill during the legislative session sometimes violates federal and treaty law, yet political powers all too often push them all the way to the governor's desk. Sometimes, the governor even requests them himself. Take this year's water bills, for example. This year, there were more than 80 bills dealing with water resources. Well over half of them should have raised the dander of anyone interested in the protection of natural resources.

The tribes have said, over and over, that these bills violate their rights—treaty-protected rights and federal water law. But the bills also violate the principles of good stewardship. Legislators and the governor have consistently prioritized the needs of future population growth over the needs of fish and wildlife. It's an ironic situation because healthy fish and wildlife equates to quality of life here, and has a major impact on economic as well as cultural well-being of this and future generations.

None of the bills require water users to protect or restore instream flows. And they do not provide certainty that instream needs of fish and people will be adequately protected.

Obviously, fish need water. All too often, legislative bills are meant to take it away from them. Bills are often driven by agriculture, development, cities and utility districts interested in grabbing more and more rare and precious water for their future growth. Grabbing water seems an easy thing to do in the Legislature. Our job, as natural resource supporters, is to see that it slips through their fingers, if they continue to demonstrate poor judgement and lack of vision.

Changes in water law must include clear and measurable mechanisms for maintaining adequate flows for fish, recreation, and quality of life. The bills we have seen do not protect the water resources that belong to the citizens of this state.

We encourage the Legislature to hold its vote until there can be adequate analysis of the impacts of their bills on rivers and streams. It's important for the state's lawmakers to understand the consequences of their actions on environmental health rather than just kowtow to special interests. If these bills pass, and the Governor signs them, they will likely cause significant harm to many of our rivers and aquifers. We ask the state lawmakers to consider the implications of these bills to the recovery of ESA-listed fish species and to meeting water quality standards.

Let's be clear. We're not against people who need water. Everybody needs water. But isn't it time for the Legislature, and the governor, to balance growth with clear, well-envisioned natural resource management? To do that, they have got to learn to see the big picture. Enabling more and more exploitation of limited natural resources is short-sighted and unwise.

Northwest Indian Fisheries Commission News

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On The Cover: Keith Charles, Lower Elwha Klallam tribal member and habitat restoration technician, holds "Big Brother," an injured bald eagle he helped rescue. Story On Page 3. *Photo: D. Friedel*

Tribe Comes To The Aid Of 'Big Brother'

Lower Elwha Klallam tribal members and eagles have lived side-by-side and shared in the abundant salmon runs of the Pacific Northwest for thousands of years. Keith Charles, tribal member and habitat restoration technician, understands that tradition and recently went out of his way to try and keep it alive.

In December, Charles came across a badly injured bald eagle while looking for coho salmon spawning beds in Field Creek, near Joyce. Charles quickly got help from another tribal technician, Rick Blair, and the pair took the bird to the Northwest Raptor Center in Sequim, where the eagle could be treated for a gunshot wound to his head.

When Charles found the mature eagle, named "Big Brother," the bird had lost one eye and a portion of his beak was ripped away. The eagle was wet, as if he had fallen in the stream, looked malnourished and was unable to fly.

"I was able to sneak up on him because he couldn't see out of one eye," said Blair, explaining how he managed to get close to the bird and wrap him in a jacket. "It looked like he had been wounded for two or three days. And the wounds looked pretty bad."

While hopes were high that the eagle's wounds would heal, the bird eventually succumbed to its injuries a few weeks later.

"This is very disappointing. It's sad," said a somber Charles. "I was hoping he would be able to make it, but he is in a better place now. It was a pretty drastic blow to the head and he was in need of a lot of repair. I'm just glad he doesn't have to suffer through it anymore."

'Big Brother' rests in the arms of caretaker Jaye Moore of the NW Raptor Center. *Photo: D. Friedel*

Blair said he also was disappointed when he found out Big Brother had died. "It's just too bad," he said. "We knew he was in pretty bad shape and we had to be ready for something like this to happen, but it's still very upsetting. I really hoped he would pull through this."

It's illegal to shoot a bald eagle. Stiff penalties, including jail time, can be imposed for killing or even harassing bald eagles. Bald eagles are listed as "threatened" under the federal Endangered Species Act. Hunting and chemicals, such as DDT, led to the depletion of the species. In 1999, the U.S. Fish and Wildlife Service, citing a steady increase in the population, proposed removing the bald eagle from the list, but the agency has yet to make a decision on that proposal. In the Pacific Northwest, where numerous salmon runs provide an important food source for the eagles, populations also are slowly growing.

The eagle Charles and Blair found measured about 3 feet from head to tail and weighed around 8 pounds. The bird's wingspan extended about 6 feet. Mature female bald eagles are often larger, sometimes weighing 14 pounds with a wingspan of up to 8 feet.

"By helping the eagle, it shows that Keith and Rick really care," said Jaye Moore, of the Northwest Raptor Center. "They didn't have to do that, they could have left him out there. But they both have big hearts." Of the injured or dead eagles Moore deals with at the raptor center, the majority have been shot, she said.

While at the raptor center, the eagle was fed with a tube. But as the days passed, the wounds slowly started to heal and he was able to eat small pieces of salmon on his own, said Moore. However, the seriousness of the wounds finally caught up to Big Brother and he died between feedings late one night. "He put up a strong battle; he just couldn't make it," Moore said. After he died, the eagle was sent to a repository, where American Indians can obtain the feathers for traditional ceremonies and other customary uses, said Moore.

The Lower Elwha Klallam Tribe donated money and fish to the nonprofit Northwest Raptor Center. "The tribe really came up big for the center," Moore said.

Mike McHenry, habitat biologist for the tribe, said he would like to see an investigation into who shot the bald eagle. "I don't understand what would drive a person to do something like this," McHenry said. "There is just no excuse for something like this to happen to these birds." – *D. Friedel*

Tribes Work To Solve Mysteries Of P

Spot shrimp skitter along the bottom of Puget Sound, searching for decaying fish or other nutritional morsels. Their slender, spindly legs and spiny antennae give them an otherworldly appearance – especially when the sudden pressure drop from a rushed trip to the surface in a fisherman's pot lends their eyes a devilish red glow. Even their sex lives distinguish shrimp from other sea creatures: they begin life as males before transforming into females after one or two years.

It seems fitting that a creature this mysterious would leave much unknown about its life beneath the sea. But to tribal leaders and biologists, a lack of knowledge is unacceptable: the more we know about these dwellers of the deep, the more effectively tribal and state co-managers will be able to protect them for future generations.

"Shrimp are important to the culture and lifestyle of Puget Sound tribes," said Lorraine Loomis, fisheries manager of the Swinomish Tribe. That's why the tribes are entering the second year of a Puget Sound-wide study of the species this spring.

Research is kicking into full swing now as tribes from all around Puget Sound are doing studies of the resource in their traditional, treaty-reserved harvest areas. The information they gather will help answer basic questions about the life history of spot shrimp and enable the co-managers to enact more effective regulations.

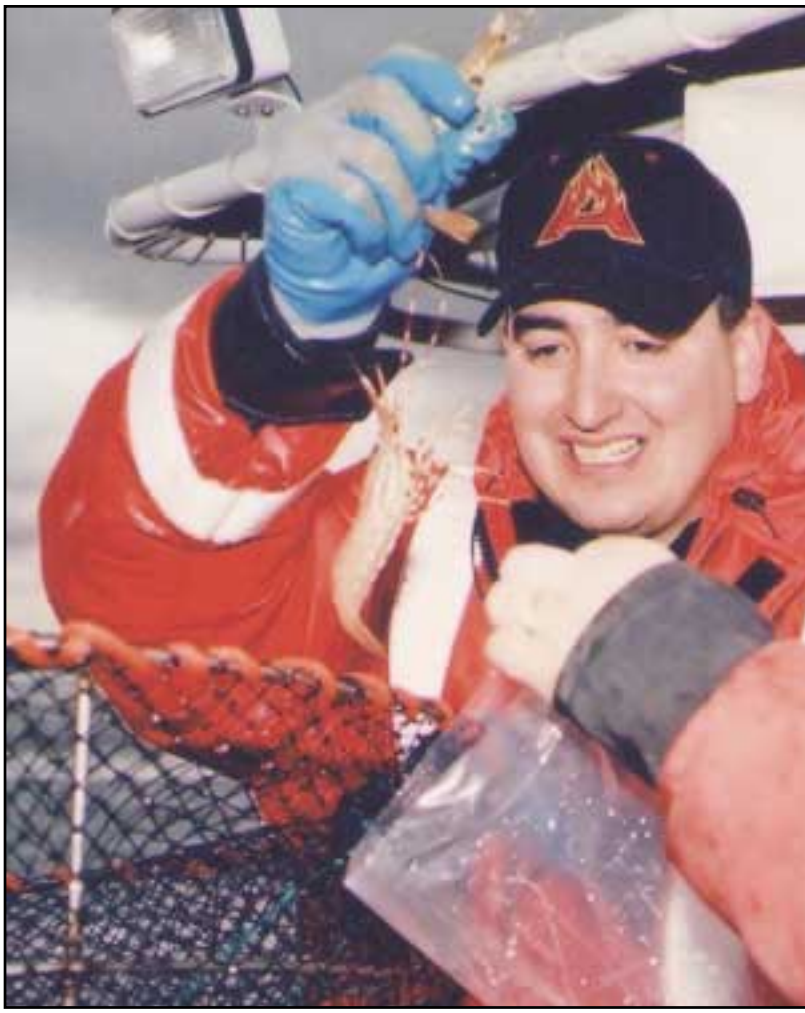
"The treaty tribes are shouldering the responsibility of gathering the data necessary to ensure the sustainability of the shrimp fishery," said Randy Kinley, chair of the Lummi Nation's fish commission.

Tribes taking part in the study include the Tulalip Tribes, who survey Tulalip Bay south of Hat Island; the Swinomish Tribe and Upper Skagit Tribe, who are working together to survey Saratoga Passage; the Lummi Nation, which surveys the San Juan Islands; Muckleshoot, taking stock of Elliott Bay; and Suquamish, studying the Edmonds area.

"Last year, we worked on getting the basics down and the bugs worked out," said Kelly Toy, shellfish biologist with the Tulalip Tribes. "This year, the serious research starts. We're taking the first step toward understanding the basic biology of what shrimp do throughout the season"

The study will examine fundamental and unanswered questions about how shrimp live. It's still a mystery how many years shrimp can expect to live after they transition from males to females, how many times those females can spawn, and what genetic relationship exists between shrimp populations. Plus, shrimp populations may behave differently in different areas.

"We want to start gathering some baseline data on population dynamics," said Andy Dalton, shellfish biologist with the Muckleshoot Tribe. "We don't know how harvest impacts shrimp populations."



Tulalip technician Rocky Joseph gathers spot shrimp off the southern of Hat Island as part of a study of the crustaceans. *Photo: J. Shaw*

There are other mysteries about the shrimp that the study will explore.

"For example, we don't know whether shrimp die after spawning," said Dalton. "There is evidence for and against shrimp spawning more than once. Just figuring that out would go a long way in determining how shrimp populations vary over time."

In the San Juans, Lummi crews are working to determine age class structure and changes in shrimp population associated with fishing. The answers they uncover in these northerly waters will be essential to understanding shrimp biology in the frigid North Sound waters.

Because tribes are strategically located around the state, they can produce knowledge that is both unique to their regions and supportive of broader research.

"Tribes have a crucial role to play because they have lived on these waters for generations. This gives tribes expertise about their local ecosystems," said Jim Gibson, shellfish bi-

uget Sound Shrimp

n shore

ologist with the Swinomish Tribe. "Tribal staff can also respond quickly to changing research needs, since they're based in different areas around the sound that we need to study."

In tests conducted last year in the Edmonds area, the Suquamish Tribe found the spot shrimp population slightly declines after harvest, but quickly bounces back — indicating that the harvest probably has minimal impact on the shrimp population. Also, the size of shrimp when they transition from male to female is larger than was previously thought.

"It's important that we increase our understanding of the life history of spot shrimp," said Paul Williams, shellfish program manager for the Suquamish Tribe. "Their age and size when they reach sexual maturity; if they produce eggs more than once; these are some of the questions we hope to answer with a few more years of data. That will help us manage the spot shrimp population and determine an appropriate harvest quota, which we believe is currently at a conservative level."

While shrimp don't produce the same revenue that other shellfish opportunities do, harvesting the tasty crustaceans is growing in importance. With salmon runs dwindling, tribal fishermen have turned toward alternative fisheries to support their families and continue a way of life intrinsic to their culture.

Because it is one of the first fisheries of the spring season, going for spot shrimp enables Indian fishermen to stay on the water and make a living throughout the year, even in areas where salmon stocks are depressed. With careful planning, tribal fishers can pull pots of shrimp in April; move on to crab and clams later in the year; and get by in the winter harvesting such unconventional targets as sea urchins.

"Shellfish have always been crucially important to our culture and way of life," said Scott Schuyler, Upper Skagit Tribe natural resources policy coordinator. "Learning more about shrimp will help us ensure that the resource is protected, now and in the future." – *J. Shaw*

Spot Shrimp Fast Facts

- Scientific Name: *Pandalus platyceros*
- Spot shrimp are found in the northeast Pacific Ocean from southern Alaska to southern California and also in and around the Sea of Japan.
- They are the largest shrimp in the North Pacific.
- Conspicuous white spots just behind the head and just in front of the tail are responsible for the name.
- Shrimp are among the few animals that are "protandrous hermaphrodites" — shrimp spend the early part of their lives as males and later transform into female for the rest of their lives.
- Females lay anywhere from a few hundred to about 4,000 eggs.

U.S. Joins Makah In Whaling Appeal

The Makah Tribe has appealed a shocking decision by the U.S. 9th Circuit Court of Appeals to stop the tribe from exercising their treaty reserved whaling right.

Joining the tribe in appealing the decision are 23 tribes from Washington and across the country as well as the federal government. Tribal officials expect a ruling in a few months.

In December 2002, the 9th Circuit Court of Appeals ruled that the tribe's treaty right to hunt whales was subject to the Marine Mammal Protection Act and that a full environmental impact statement, not just the two completed environmental assessments, was required. The ruling was made on an appeal filed by anti-whaling groups whose original suit was dismissed by a lower court.

The Makah Tribal Council and tribes throughout the country voiced dismay about the decision that flew in the face of 30 years of treaty rights decisions interpreting the Stevens Treaties, including Judge Boldt's 1974 decision in *U.S. v. Washington.* The ruling has potentially serious implications for all Indian treaty fishing rights.

In a ruling that contradicts several decades of treaty law and federal court precedent, the appeals court has held that the Marine Mammal Protection Act applies to the tribe even though the tribe's proposed harvest of five whales per year poses no obvious threat to the gray whale population. The gray whale was removed from the Endangered Species Act list in 1994 and numbers over 17,000. The tribe has actually taken only one whale over the past five years.

"The tribes have carefully managed their fisheries and have been at the forefront of regional efforts to protect salmon and their habitat," said John Arum, attorney for the Makah Tribe. "Nevertheless, many runs of salmon have been listed as threatened and endangered under the Endangered Species Act due to widespread destruction of salmon habitat by non-Indian development. If it stands, the appeals court ruling may lead to new, draconian restrictions being imposed on tribal fishing."

In their appeal, the tribes and the federal government argue that the appeals court decision has violated the tribe's treaty whaling rights. The U.S. Constitution clearly states that treaties are "the supreme law of the land," and the Marine Mammal Protection Act itself addresses the question of tribal treaty rights: "nothing in this act…alters or is intended to alter any treaty between the U.S. and one or more Indian tribes." They also argue that requiring an environmental impact statement ignores the science in the environmental assessments done by the National Marine Fisheries Service and is in conflict with years of previous decisions.

– *D. Preston*

Record Numbers Of Salmon Reach Spawning Grounds

Taking advantage of salmon runs boosted by favorable freshwater and marine conditions, tribal and state managers allowed ever-larger numbers of fish to return to their spawning grounds in 2002 in a number of areas.

"Our harvest management strategy is working," said Joe Hatch, fisheries manager with the Tulalip Tribes. "Great sacrifices have been made by our fishing communities, but those sacrifices are starting to pay off."

Chinook salmon, the region's most high profile fish, are a prime example.

About 7,200 chinook salmon in the Snohomish River system — including the Snohomish, Skykomish and Snoqualmie rivers – escaped to spawn this year. This exceeded the former goal of 5,250, and marked the fourth time in the past five years that the co-managers were able to exceed this level. In 2001, they achieved the highest chinook escapement since at least 1965. "Escapement" is the number of fish allowed to spawn in order to sustain a run at a desired level.

Chinook salmon returns were good in a number of areas of western Washington this year. *Photo: D. Preston*

Perhaps the flashiest numbers in both the Snohomish and Stillaguamish systems showed up in chum salmon escapement. More than 155,000 Snohomish chum moved upstream, shattering the minimum escapement number of 28,000 and representing the highest observed Snohomish chum numbers since at least 1982.

"This doesn't mean we've achieved salmon recovery – instead, it means we have to continue with sensible management practices," said Hatch

In the Stillaguamish basin, where this year's coho escapement topped 27,000 – a good 10,000 fish more than the escapement goal. Last year's escapement of 74,000 was the highest ever.

"We're making a real effort on the harvest side," said John Drotts, director of natural resources with the Stillaguamish Tribe. "Now, it's time to step up our habitat improvement efforts as well, so we can continue these results over the long term."

Another bright spot: the unusual even-numbered year pink salmon run in Snohomish county. Pinks (or "humpies") are normally odd year fish, but Snohomish county rivers have large even-numbered year pink runs — unique in the Puget Sound area. Almost 45,000 spawned in 2002, and the run is growing exponentially, not quite doubling in size with each generation.

On the Washington Coast, the highest returns of coho salmon on record were posted by the Quileute Tribe for 2002. Quileute Natural Resources (QNR), as co-managers of the Quillayute River system, announced a record 23,016 coho escapement and also near-record fall chinook salmon returns of 6,067.

The record returns come on the heels of anxious sports fishermen protesting tribal fishing last October during unseasonably low water in the Quillayute, Sol Duc, Calawah, Dickey and Bogachiel rivers.

"The result of the tribe's model for escapement during last fall's low water proved to be effective in contributing to record coho returns," said QNR Director Mel Moon. "We may have been too conservative in our escapement factors, actually. For two years now, coho and chinook escapement have far exceeded expectations."

The combined escapement estimate for summer and fall chinook was 7,069 fish, the fifth biggest year on record.

Much of the year's success can be attributed to the extensive habitat restoration and stream rehabilitation undertaken by the tribe over the past five or six years, especially along the Sol Duc River which posted 13,000 returning coho. The tribe has been actively involved with implementing the watershed analysis process with prescriptions for improvements developed in partnership with the state Department of Fish and Wildlife, Rayonier Timber and the U.S. Forest Service, said Moon.

The only shadow cast over these record years is the poor performance of the market prices for wild coho and chinook salmon. Quileute fishermen are struggling to survive on 50 cents a pound for chinook and 20 cents a pound for coho at its lowest last fall.

"Excessive factory farm-raised Atlantic salmon have driven the prices into the ground," said Moon. "Our fishermen are concerned that the exotic Atlantic salmon are going to push wild fish out of the market."

"We have submitted pre-season estimates in preparation for the upcoming season and the outlook is good," he said. "In the meantime, we will continue to improve habitat and river conditions where we can and manage our escapement levels closely for the benefit of tribal and non-tribal fishermen alike."

– J. Shaw / K. Boysen, Quileute Tribe

Inmates Help Stillaguamish Tribe Improve Coho Habitat

An inmate from the Indian Ridge Correctional Facility uses a jackhammer to carve a fish ladder on Beaver Pond Creek. *Photo: J. Shaw*

The Stillaguamish Tribe and inmates from Indian Ridge Correctional Facility are teaming up to save coho salmon in a tributary of Pilchuck Creek.

To allow salmon to travel upstream into Beaver Pond Creek, four inmates are carving a fish ladder out of a solid rock barrier to fish passage. The project will open up approximately three miles of quality spawning and rearing habitat for coho.

"We expect to see immediate benefits to salmon from this project," said Pat Stevenson, environmental director for the Stillaguamish Tribe. "In the future, the system could produce hundreds more coho salmon each season as a result."

For the inmates, it's an opportunity to give back to the community.

"Doing something that makes a difference – and the appreciation you get from the people you work with on the project – is great," said inmate Steve Fishback. The Stillaguamish Tribe provides tools, planning and project supervision. The inmates provide the labor.

The mouth of Beaver Pond Creek fans out over a stone dome and makes a 4-foot drop into Pilchuck Creek. Currently, fish can only access the high-quality habitat above the rocky blockage when the Pilchuck is flooding. The ladder Fishback and the others are constructing consists of four deep pools hewn from the rock. Instead of a multiple-foot drop, the fish will have a more manageable 9 inches to travel from pool to pool.

With the barrier gone, though, evidence exists that a healthier and more consistent coho run could develop. In Duane's Creek, a similar creek in the same area, 259 coho were seen spawning in 2000-2001 and 458 were seen in 2001-2002. Stillaguamish tribal staff are optimistic that breaking down the barrier could result in a comparable run in Beaver Pond Creek.

Stillaguamish tribal biologist Jody Brown speculates that cutthroat trout may also benefit from the project, though the primary target is coho.

"Any time we can open up access to natural habitat, there's going to be a benefit for all fish in the system," said Stevenson.

A Salmon Recovery Funding Board grant funds the inmate labor. The Stillaguamish Tribe funds the remainder of the project. – *J. Shaw*

Suquamish Tribe Seeks Partner For Net Pen Operation

Corporate sponsorship is widespread in the Puget Sound region nowadays; Safeco Field and Key Arena are two examples. While salmon net pens near Bainbridge Island aren't on the same scale as those two facilities, the pens are equally important to the area, especially to fishermen.

Because budget constraints this year have forced the Suquamish Tribe to discontinue its net-pen operation on Agate Passage, the tribe is looking for a sponsor – big or small – to help fund the program in the future. Without those funds, the highly successful operation, which is a cooperative effort with the state Department of Fish and Wildlife, could be dead in the water. For the past two decades, about 600,000 hatchery coho salmon have been released each year from net pens in front of the Suquamish Tribal Center.

"Everybody – commercial, sport, treaty tribal fishermen – benefit from the return of these fish each year," said Paul Dorn, salmon enhancement program manager for the Suquamish Tribe.

While this year's closure, the first in 23 years of operation, is a setback, the tribe has made the best of the situation. About 205,000 coho smolts that would have been held in Agate Passage this year are instead being raised in Little Clam Bay. Personnel from the U.S. Navy's Manchester Fuel Depot and the Port Orchard Rotary Club are helping raise the fish. An additional 150,000 juvenile coho that would have been at Agate Passage were transferred to south sound net pens. Those fish make up for a shortfall in coho this year at the south sound facility, which is operated as a cooperative between the Squaxin Island Tribe and WDFW.

The Suquamish Tribe is hopeful that a source of revenue – totaling about $35,000 – will become available to keep the program afloat, said Rob Purser, fisheries director for the tribe.

– *D. Friedel*

Culverts

Lummi, Nooskack Tribes Tackle Fish Passage Issues

Thanks to a cooperative project between the Lummi Nation and the state Department of Natural Resources, coho salmon in a tributary of the Nooksack River are enjoying access to habitat formerly blocked by an impassable culvert.

A survey of the site on Dec. 3 found more than two dozen coho – most of them native, non-hatchery fish – spawning above the formerly blocking culvert. The unnamed tributary to the north fork of the Nooksack River is near Racehorse Creek. Several hundred yards of habitat were opened up by the culvert replacement.

"Habitat is the key to recovering our wild salmon populations," said Merle Jefferson, director of Lummi Natural Resources. "Fixing blocking culverts like this one is a very efficient and effective means of improving fish habitat."

Salmon require access to quality spawning habitat in order to reproduce, but failing or improperly installed culverts often prevent fish from accessing pristine areas of rivers and tributaries. Lummi Nation has identified a series of problem culverts in the area.

That identification is the first step in the repair process. After selecting this culvert as one in dire need of replacement, Lummi Nation worked with the state Department of Natural Resources (DNR) on getting repairs done. Lummi used funds from a Centennial Clean Water grant to fund the program, and contracted with an independent native contractor to do the repair work on the DNR road.

"This project is an example of tribal government working with another government to help save the salmon that are crucial to us all," said Jefferson. "Lummi is committed to working together with other jurisdictions on salmon recovery."

Though replacing this culvert will help Nooksack River coho, it is far from the only problem culvert out there. "Unfortunately, there are numerous other culverts that block salmon from potentially productive habitat," said Jefferson. "We try to prioritize by fixing the worst ones first."

This culvert reached the top of the list because it prevented any anadromous (sea-run) fish from passing it.

Gregg Dunphy, a biologist for the Lummi Nation, takes a DNA sample from a spawned out coho salmon near a culvert the tribe repaired recently.

Photo: J. Shaw

Nooks
biologi
culvert

ack Natural Resources technician Loren Roberts and st Chuck Sauvaugeau use a laser range finder to catalog data in the Nooksack River Basin. *Photo: J. Shaw*

While there were resident populations of cutthroat trout living above the culvert, no coho could get by it on their journey home to spawn.

While surveying the site to verify that coho were using the newly-opened habitat, Gregg Dunphy, Lummi Nation biologist, also took DNA samples of some fish found above the culvert.

"Not only will this project improve habitat and help the Nooksack River produce more fish, it also gives us an opportunity to broaden our understand-

Nooksack Tribe To Catalog Problem Culverts

Some good news for wild salmon: the tributaries of the Nooksack River contain very high quality spawning habitat. The bad news? Much of that habitat is inaccessible to fish, because failed or improperly installed culverts block access.

Fortunately, there's more good news on the way: the Nooksack Tribe's Natural Resources department will inventory culverts throughout the area beginning this spring. They will measure spawning and rearing habitat above the barriers, finding the most important culverts to repair immediately.

"Fixing impassable culverts is one of the quickest and most effective ways to restore habitat for our wild salmon," said Bob Kelly, director of Nooksack Natural Resources (NNR). "Our main goal is to recover those wild fish populations, including the threatened spring chinook, and the research we're doing right now will help us do just that."

NNR will assemble existing barrier information, prioritize field surveys using Geographic Information Systems analysis, then inventory barriers and conduct habitat surveys upstream of blockages. This information is critically important to prioritize restoration projects in the North, South and Middle Forks of the Nooksack River: culverts blocking the most high-quality habitat in Water Resources Inventory Area 1 (WRIA 1) that can be removed economically will be moved to the top of the list.

"During this project, we'll cover a lot of miles," said Chuck Sauvageau, Nooksack habitat biologist, who is serving as field supervisor for the effort. "We're hoping to get over 600 miles of stream habitat cataloged throughout WRIA 1."

"Throughout Washington State, culverts block an estimated 4,500 river miles of historic salmon habitat," said Kelly. "If we can solve this problem right here in our own watershed, that will be a huge step toward bringing back the salmon."

Nooksack crews were trained in how to perform the assessment work on March 18, and are scheduled to begin work on April 1. The project is funded through a Salmon Recovery Funding board grant obtained by Whatcom County last year. – *J. Shaw*

Passages

Florence Kinley

Florence Kinley

Florence Kinley, a dedicated Lummi activist for tribal treaty rights and the first secretary of the Northwest Indian Fisheries Commission, died in January at her Lummi Reservation home. She was 86.

Kinley was born Nov. 23, 1916. She was just 18 years old when the U.S. federal government proposed the Indian Reorganization Act in 1934. In resisting this law, she began a life of activism for the rights of American Indian people.

"Florence Kinley lived a life devoted to her people," said Billy Frank, Jr., chairman of the Northwest Indian Fisheries Commission. "Through the biggest struggles of our time, she fought hard for what was right."

She struggled against termination policies of the 1950s, advocated treaty rights during the fish wars of the 1970s, and worked for fair education afterward.

Before marrying Dutch Kinley, she worked as a secretary for the U.S. Bureau of Indian Affairs. During their marriage, the Kinleys fished five months out of the year, while advocating for the tribe during the rest of the year. Dutch Kinley preceded her in death, passing in 1983.

"In our history, there are a lot of husband and wife teams that gave more than they received," said Chairman Darrell Hillaire. "They really made the community rich with the things they've done and left us."

"She was always in the background," said Lummi tribal council member Jewell James. "She was the backbone."

– *J. Shaw*

Monitoring Program Ensures Safe Geoduck Harvest

Tacoma's industrial waterfront disappears behind Browns Point as a Puyallup tribal geoduck boat makes its way to the harvesting tract along the eastern shore of Maury Island. On any given day, there might be up to five tribal boats heading to the harvest area. Today there is only one. On board is Dave Winfrey, the tribe's shellfish biologist, and the boat's skipper, Daniel Tobin. Winfrey will dive on the tract currently being harvested by the tribe and collect geoduck samples to test for paralytic shellfish poisoning, or PSP.

Daniel Tobin displays geoducks gathered as part of a Puyallup tribal monitoring program to protect consumers from paralytic shellfish poisoning. *Photo: E. O'Connell*

The Puyallup Tribe maintains a strong geoduck sampling program, ensuring that the giant clams are safe for human consumption."This fishery supports between 40 and 45 families," said Winfrey. "It is vital for the livelihood of the divers, operators and their families that we ensure a safe product." PSP is a neurotoxin that causes paralysis. PSP in geoducks may be triggered by blooms of a specific alga, which usually occur during spring and summer.

"The state Department of Health is conservative and will err on the side of protecting public health," said Winfrey. "While the alga that causes PSP grows mostly in the summer, a regular monitoring program is the only way to ensure safe geoducks are being harvested."

In addition to protecting the health of the consumer, the PSP sampling program protects the integrity of the Puyallup tribal geoduck harvest. "This harvest not only provides income for the geoduck divers and boat operators, but it supports a large portion of our entire shellfish program," said Winfrey. "A lot depends on the public safety and viability of the geoduck harvest."

– E. O'Connell

Geoduck Fast Facts

- Scientific name: *Panopea abrupta*
- Average size is 1.9 pounds and can range up to 8.5 pounds
- Geoducks can live to be over 130.
- The geoduck clam is the largest bivalve along Puget Sound and the largest burrowing clam in the world.
- About 109 million adult geoducks live on the bottom of Puget Sound.

Generations

Suquamish tribal members Emmanuel Alfred, left, and Justin Alfred beach seine near Agate Passage. Indianola is visible in the background of the photograph, which was taken in the 1920s. Photo (BMM.029, STA 1350) courtesy of Suquamish Tribal Archives and the Burke Museum of Natural History and Culture.

Puyallups Seek Chum Salmon Ancestors

Terry Sebastian and Karen Seymore, Puyallup Tribe, take samples from chum salmon returning to Clarks Creek. *Photo: E. O'Connell*

Over 150 chum are lined up in neat rows at the Diru Creek Hatchery. The hatchery-produced fish look almost identical to each other and to their cousins that are now spawning in the wild. But they are likely not the same fish. Before their eggs and milt are mixed together to create the next chum generation at the tribal hatchery, genetic samples will be taken to compare these chum to others spawning elsewhere in the Puyallup watershed.

The Puyallup Tribe of Indians is undertaking a genetic study to determine how many distinct populations of chum there are in the Puyallup system. "This has pretty big implications in terms of how we deal with Puyallup River chum," said Blake Smith, enhancement manager for the Puyallup Tribe. "Are populations from these tributary streams independent of each other, or do they interbreed? That's a question we need to answer if we want to protect and enhance Puyallup chum."

Much of the Puyallup chum's historic habitat has been degraded in the past century and is still disappearing, making an analysis of their populations all the more important. Chum spawn in the lower reaches of river systems, sticking to low gradient areas with shallow water.

"Many of the streams that we would consider 'chum streams' don't exist anymore or have been severely altered," said Smith. "Industrial and urban development in the lower watershed has put limits on where chum can go to spawn. By learning more about the populations that use what is remaining of the Puyallup River's habitat, we can be smarter about protecting it."

Even though Puget Sound chum stocks this year are expected to come back in numbers not seen since records were first kept in 1913, Smith believes the Puyallup River historically supported a much larger chum population than it does now. "On the White River (a tributary to the Puyallup), historic catches used to be in the thousands," he said. "Now, we only see escapements in the hundreds."

Taking genetic samples during spawning surveys conducted throughout the chum's range on the Puyallup and at the Diru Creek Hatchery, the tribe is putting together a library of genetic material on chum salmon. The genetic information will guide the tribe to better hatchery practices. Until 1993, chum spawned from eggs originating outside the Puyallup watershed were released. "Early on, fish managers saw importing eggs as an essential way to supplement salmon populations," said Smith. "The genetic information we're gathering from hatchery and wild returns will tell us how the introduced chum salmon have impacted native stocks."

With the listing of three western Washington salmon stocks as "threatened" under the Endangered Species Act, tribal and state managers have put a new focus on evaluating the role of hatcheries in wild stock rebuilding efforts. The genetic research by the tribe dovetails with this effort. The Hatchery Reform Project is a federally funded, systematic, science-driven effort to address how hatcheries can help recover and conserve naturally spawning salmon populations and support sustainable fisheries.

A male chum salmon thrashes in the holding pond at the Puyallup Tribe's Diru Creek Hatchery. *Photo: E. O'Connell*

The Hatchery Scientific Review Group – an independent science panel component of the Hatchery Reform process – is currently reviewing hatchery practices in the Puyallup watershed. "Hatchery Reform is a way for us to better integrate hatcheries into salmon recovery," said Smith. – *E. O'Connell*

Jimmeycomelately Restoration Work Continues On Pace

It took several months and three excavators, but a new channel for the Jimmeycomelately Creek is nearly finished, paving the way for the Jamestown S'Klallam Tribe and the Clallam Conservation District to focus much of its restoration efforts this summer on the lower portion of the creek that empties into Sequim Bay.

"We still have some work to do in terms of excavating and bringing in wood and gravel for the channel. That should start in May and be completed by the end of July, finishing the first phase of the restoration project," said Byron Rot, habitat biologist for the Jamestown S'Klallam Tribe. "Then we are going to swing into the estuary, where there is a number of things that need to be done."

The goal is to return the creek and estuary back to their natural state – a healthy wetland for fish and wildlife. The creek's newly created channel, which follows its historic course, will eventually flow into the estuary. But first, roads and landfill need to be removed from the estuary, returning it to its original state. The tribe and two state agencies purchased about 25 acres of land at the mouth of the creek in 2002.

The project, which began last year, is necessary because of past mismanagement. During the early 1900s, the creek was rerouted and moved to the side of the valley to allow space for farming. Over time, pools – essential for salmon – disappeared along the lower portion of the creek as the channel filled with gravel. The creek's meandering channel will restore that habitat, which is important to threatened Hood Canal/Eastern Strait Juan de Fuca summer chum. The creek also is home to steelhead and cutthroat trout, along with coho salmon. "Birds also will benefit from the restoration," Rot said. "A number of different species use Sequim Bay. And what's good for the fish is good for the birds and vice versa."

Not only will salmon and waterfowl benefit from the project but so could commuters and people living in the area. In the past, Jimmeycomelately Creek has flooded during winter rainstorms, once closing Highway 101, the only east/west arterial in the area. Moving the creek back to the lowest part of the valley will decrease the chances of flooding in the area.

Estuary restoration at the old log yard has been a priority for the tribe for over 10 years. Along with the tribe, several landowners and local, state and federal agencies are participating in the restoration.

"It's an amazing project, with so many groups working together," Rot said. "We are trying to accomplish a large-scale project in a relatively small watershed, and we hope that this will be used as a model for many watersheds with similar problems."

The earliest the constructed channel would be connected is July 2004, with remaining estuary restoration in 2005, said Rot. Of course that depends on no major unforeseen obstacles and bad weather. The project's price tag is about $6 million, with the bridge accounting for 25 percent of the total cost, and it is mostly funded by state and federal grants.

In addition to the tribe and the Clallam Conservation District, other partners involved in the Jimmycomelately project include local landowners, the Washington Department of Fish and Wildlife, Clallam County, Washington Department of Transportation, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency and several local non-profit organizations. Funding for the land purchase include the state Department of Natural Resources (Aquatic Lands Enhancement Account), the state Salmon Recovery Funding Board, the state Department of Ecology, the U.S. Fish and Wildlife Service (National Aquatic Wetlands Conservation Act), the Bureau of Indian Affairs and the EPA. – *D. Friedel*

Hilton Turnbull, biologist for the Jamestown S'Klallam Tribe, checks on the progress of the Jimmycomelately Creek restoration project. *Photo: D. Friedel*

Coastal Tribes Enjoy Record Crab Season

An abundance of Dungeness crab – coupled with optimal weather – gave coastal tribal fishermen a record season despite low prices from crab buyers.

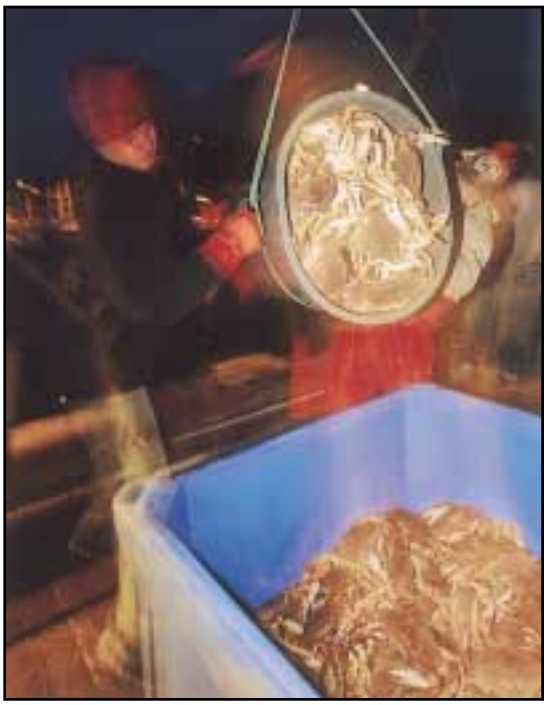
Karl Braden, Quinault Indian Nation fisheries technician, checks the size and hardness of Dungeness crabs.
Photo: D. Preston

Quinault Indian Nation (QIN) fishermen landed 1.7 million pounds of crab during the roughly six week season, shattering the previous record of 689,000 pounds set in the 1999-2000 season. Quileute tribal fishermen, facing limited buying from a flooded market, were still able to land nearly 700,000 pounds during this year's season. That's also a record.

"This was the crab year everyone needed. We had good weather and there was a lot of crab," said Bina Kramer, a QIN tribal member who owns and works on the Lisa Ann with her husband Tony. "There was the one storm in the beginning of November and then there were 19 straight days of good weather and I think we were out every day."

Quileute tribal fisherman Dan Payne agreed weather and crab availability were the keys to success this year. "We would have probably done all right last year, but the weather was lousy," he said. Payne has been fishing for 25 years. Tribal fishermen are hoping there is still crab left to catch following their openings for black cod and halibut. "The price has come up and it would be nice if there is crab left out there to get in another month," said Gary Ratliff, Quileute fisherman.

An estimated six vessels from the Quileute Tribe and 14 QIN vessels participated in the crab fishery. Inconsistent crab abundance in the Neah Bay area means it is a less significant fishery for the Makah Tribe. The Hoh Tribe plans to participate in the future.



Quileute Seafood employees unload the Dungeness crab catch from a Quileute tribal member's boat at the tribe's marina in LaPush.
Photo: D. Preston

In comparison, non-treaty fishermen in some 311 vessels are on track to bring in nearly 20 million pounds. That's 8 million pounds more than 2001-2002.

Even though tribal fishermen have demonstrated their ability to land large amounts of crab, they are far from landing the 50 percent of the catch they are entitled to by treaty.

"There is a consensus from federal and state managers that there are too many non-tribal boats fishing for crab," said Mel Moon, natural resources director for the Quileute Tribe. "But we also need more information about Dungeness crab. Very little is known about their migration and how harvest affects subsequent generations." With more pre-season information, for instance, tribes would be able to negotiate better tribal-only fishing days and areas that would give them the opportunity to catch closer to the 50 percent. "A pre-season survey would be a great tool to have – it's expensive and impractical at this time, but it would be a significant improvement in managing this fishery," said Joe Schumacker, QIN marine shellfish biologist.

Both men said better real time information about where and when crab is caught is also needed on the coast. "If we know in-season where, when and how much crab is being caught, adjustments can be made to preserve the resource and provide better opportunity for tribal fishermen," said Moon. A vessel monitoring system used extensively on the East Coast is one tool that might be used for crab. The system uses satellites to track when and where boats are fishing. "We're already looking at that system to monitor groundfish catches and we think it would work well for crab too," said Moon. "A season like this shows that tribal fishermen can bring it in if given the opportunity." *– D. Preston*

Hoh Tribe Targets Japanese Knotweed For Eradication

Jill Silver, habitat biologist for the Hoh Tribe, flags a knotweed plant on the Hoh River corridor. *Photo: B. Howell*

The Hoh Tribe will soon begin an aggressive multi-year campaign to eliminate knotweed from the banks of the Hoh River. The weed threatens streamside forests and natural river function.

Japanese knotweed – imported as an ornamental from Asia in the late 1800's and often found as a bush in gardens – spreads quickly, and can overrun all plants around it.

Because it can grow as much as 16-feet in one season, the plant can alter many of the salmon habitat-forming and food production characteristics of streamside forests. In other areas of the Olympic Peninsula, the plant is known to reduce the amount of gravel available for salmon spawning beds. Japanese knotweed also requires a great deal of water, stealing it from adjacent native plants. The plant has no natural predators or diseases. Like most imported plants, it isn't eaten by native insects or animals.

An inter-agency group was assembled by the Hoh Tribe and trained in knotweed control methods. Phil Burgess of the Clark County Weed Control Board led the training. Burgess has studied knotweed and environmentally-friendly control methods for more than five years. He taught the group how to inject each stem of the plant with a weed killer. Participants included representatives from Olympic National Park, U.S. Forest Service, Quileute Tribe, and Clallam and Jefferson County Weed Control boards.

The individual injections are necessary to be effective without spreading large amounts of chemical spray into the watershed. "Spray and mowing are neither effective nor safe," said Jill Silver, habitat biologist for the Hoh Tribe. "You have to spray year after year, which spreads herbicides into the air and water, and mowing means you have to dispose of the plant material in such as way that it won't have the potential to spread elsewhere."

Using Pacific Coastal Salmon Recovery funding, the Hoh Tribe is working quickly to eradicate the newly established plant from the river corridor. "Knotweed can spread by very small root and stem fragments, and it especially likes new gravel bars created every winter when the river floods and changes course into new channels. It has the capacity to completely take over a river or creek's floodplain in a very short time, and once it's established, it's believed to be impossible to get rid of," said Silver.

The tribe's habitat program initiated a survey in 2002 to map the extent of the plant's spread, but early eradication plans had to be revamped when tribal natural resources staff discovered that instead of a few plants, there were hundreds over miles of river corridor.

"People need to understand how much of a problem this plant is becoming to river restoration. They can help by reporting plant locations and by not moving it around by picking it," said Silver.

– D. Preston

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Nisqually Tribe Tracks Salmon As They Head To Sea

From left, Kyle Brakensiek, NWIFC, and Sayre Hodgson and Craig Smith, Nisqually tribal biologists, pull in a beach seine on Red Salmon Slough in the Nisqually River estuary. *Photo: E. O'Connell*

On their third try of the day, researchers from the Nisqually Tribe see what they are looking for. As the center pocket of their seine net comes closer to shore, several small silver flashes are apparent inside the mesh. "We have salmon," declares Sayre Hodgson, a tribal habitat biologist, as the net is pulled in and the juvenile salmon are quickly measured and weighed.

The tribe is studying juvenile salmon in the Nisqually River estuary to determine how hatchery and wild fish interact in the dynamic estuarine environment. "The population of young salmon leaving the river is a mystery," said Hodgson. "The only way to fill in that knowledge gap is to get out there and count them."

Whether wild and hatchery salmon use the same habitat is important because fisheries managers don't want to unintentionally harm wild stocks by releasing hatchery fish that would compete for the same resources. Nisqually River wild chinook are part of the Puget Sound chinook stock listed as "threatened" under the federal Endangered Species Act. In addition to chinook, the study is also looking at coho, chum and pink salmon and steelhead and cutthroat trout. Tribal researchers will also be studying residence time of various stocks and what the fish eat.

Besides the impacts of hatchery fish, the study is also gathering data on the Nisqually River estuary following a major restoration project last year. The tribe removed dikes along a 30-acre portion of the estuary, allowing the tide to recreate lost habitat. "It will be interesting to see how the salmon have reacted to the removal of the dikes," said Hodgson.

Using seines and fyke nets, tribal crews will be collecting juvenile fish from late winter until late summer. Fyke nets are large hoop nets that act as funnels to trap swimming fish. The nets will be set at the mouths of slough channels at high tide and will be checked near low tide, allowing the researchers to see how the tide affects juvenile salmon usage in estuarine channels. "Tidal channels in estuaries are incredibly productive areas," said Hodgson.

The study was funded by a federal Hatchery Reform grant. With the listing of Puget Sound chinook salmon as "threatened" under the Endangered Species Act, tribal and state managers have put a new focus on evaluating the role of hatcheries in wild stock rebuilding efforts. Hatchery Reform is a federally funded, systematic, science-driven effort to address how hatcheries can help recover and conserve naturally spawning salmon populations and support sustainable fisheries.

"Restoring habitat and finding out how salmon interact with that habitat is vital to our restoration efforts on the Nisqually River," said Georgianna Kautz, tribal fisheries manager. "To restore wild salmon to the Nisqually River, we need to dedicate ourselves to restoring as much as we can of their habitat." – *E. O'Connell*

Chinook Salmon Fast Facts

- Scientific name: *Oncorhynchus tshawytscha*.
- Chinook salmon are the largest of the salmon, with a length ranging up to 58 inches and weighing up to 135 pounds.
- Common names: King salmon, tyee salmon and blackmouth.
- Chinook salmon may spend 1 to 6 or more years in the ocean before returning to their stream of birth to spawn, though the average is 3 to 4 years.
- Spawning usually occurs in deep, fast water with cobble-size gravel.
- Young chinook like to rear in side channels where the water is shaded and runs slow. As they grow, the young fish gradually move into deeper, swifter water.

Vital Salmon Hatchery Slated For Closure

In the mid-1990s, fisheries biologists throughout the Pacific Northwest turned their attention to a small hatchery in the lower Dungeness River, where a new approach to restoring a dwindling chinook population was in the works.

In 2003, attention once again has turned to the Hurd Creek hatchery near Sequim. Not because of the facility's success with recovering wild salmon, but because the hatchery itself is close to extinction. Gov. Gary Locke's proposed budget for the next two years calls for three state Department of Fish and Wildlife hatcheries to be closed, including the Hurd Creek facility.

John Allison, Washington Department of Fish and Wildlife, feeds juvenile chinook salmon at the agency's Hurd Creek Hatchery. *Photo: D. Friedel*

Halting operations at the hatchery would eliminate programs aimed at restoring Dungeness spring chinook, Elwha fall chinook, Salmon Creek summer chum and Jimmeycomelately summer chum. All are listed as "threatened" under the federal Endangered Species Act, and their survival relies heavily on the hatchery.

"The Hurd Creek hatchery is a must-have if we are going to continue to restore salmon in the Dungeness and other rivers throughout the area," said Ann Seiter, natural resources director for the Jamestown S'Klallam Tribe. The tribe provides technical assistance at the hatchery. "Without this hatchery we would be severely restricted in what projects we could do for salmon restoration. Now is not the time to shut it down."

Hurd Creek's spring chinook program – the project that made news in the mid-'90s – is a unique approach to raising salmon for restoration purposes. Instead of simply catching adult chinook and randomly mixing their eggs and sperm, the reproduction process at the hatchery is much more selective. Beginning in 1993, eggs and young fry were taken from spawning nests – or redds – in the Dungeness River. The eggs from each redd were incubated separately, and each family of salmon produced from those redds were grown in separate tanks. The next generations of chinook were spawned from those fish once they had matured.

The idea behind this technique is to ensure members of a family are spawned from members of other families and that siblings are not spawned together. That improves the long-term health of the population and increases the stocks' chances for survival. – *D. Friedel*

Sailor's Delight

Quileute tribal member John Schumack's boat "The Seeker" is framed against the pink sky and rising moon at the Quileute Tribe's marina. This year's crab season was good thanks in part to good weather and high abundance of crab. *Photo: D. Preston*

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