

NWIFC News



Northwest Indian Fisheries Commission

Fall 2005

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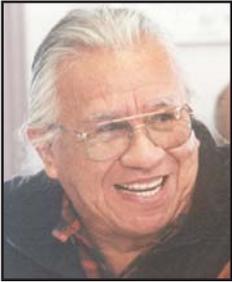


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Caring For The American ‘Village’

By
Billy Frank Jr.
Chairman



When Hurricane Katrina swept over the southern U.S., leaving tens of thousands of people homeless in its wake a few weeks ago, tribes across the country swung into gear to help provide whatever relief and support they could to our brothers and sisters in the South.

The National Congress of American Indians (NCAI) organized a nationwide fund-raising effort. The National Indian Gaming Association, coordinating with NCAI through its Spirit of Sovereignty Foundation, committed to raising a minimum of \$1 million for the cause. The Menominee Tribe of Wisconsin dispatched fire

crews to fight fires, distribute food and unload trucks. Dozens of other tribes throughout the country have raised tens of thousands of dollars, sent school supplies, opened tribal homes, tribal buildings and even casinos to help shelter victims and support aid programs. The Fort Belknap Tribes of Montana even committed to send the meat of 10 bison to the demolished region. Numerous Northwest tribes and tribal organizations such as the Potlatch Foundation in Seattle, Salmon Homecoming and Affiliated Tribes of Northwest Indians are also pitching in as best they can, with funding, direct support and prayer ceremonies. Just as they have consistently done over the years, tribal members have readily stepped forward to help ease the suffering of the needy.

No matter what some people say, tribes are not wealthy. The majority of them are very poor. They have governments to run, sick to heal, natural resources to manage, and hungry children to feed, all despite curtailed federal support programs promised to us in treaties. Frankly, tribes can ill afford to send financial aid to the South, but there has been no hesitancy in their actions to do so. As soon as the need became apparent, they stepped forward to share what little they have with both Indian and non-Indian victims of the high winds and floods, passing the hat as necessary to help support their efforts. Such efforts will continue. It is our way.

Some non-tribal people have asked how tribes can bring themselves to be so altruistic, here and in the South, given the atrocities Indians have suffered at the hands of non-Indians for so many years. The answer's fairly simple. Sharing and taking care of communities is a long-standing tribal tradition. It's not new to us. We know that if the American "village" is to survive, we must all be willing to share with one another in trying times. People have long forgotten that when whites first came to our shores, their survival absolutely depended on Indian benevolence. It is a quality that has stood the test of time, even though knowledgeable historians would tell you the tribes have been disdained and subjected to seemingly endless persecution in return. Through all of our suffering, Indian heritage stands strong.

There's another reason we can so easily empathize with our Southern friends. Tribes know what it's like to suffer, and to have relatives, homes, lands and resources swept away. We know what it's like to have hungry children and to have to endure the pain and death brought by a hurricane force. Our Katrina has been a wave of greed and reckless expansion of western "civilization."

We will also urge people to learn from the environmental lessons of Katrina. Through this mammoth storm, Mother Nature has again reminded us all that we must be sensitive to her needs and respect her. There is a price to pay when man dredges her natural wetlands and buffers, and replaces them unnaturally with fill. The forces of wind, rain and fire will erupt with more frequency and fury when man clouds the atmosphere with noxious gases. There will be long term suffering when man goes overboard with the construction of chemical plants, oil refineries and toxic waste sites – all too typically placed near impoverished minority communities.

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On The Cover: Russ Ladley, resource protection manager for the Puyallup Tribe of Indians, dips fish out of a draining reservoir in the upper Puyallup River watershed. See story on Page 3.
Photo: E. O'Connell

Puyallup Tribe Helps Save Stranded Salmon

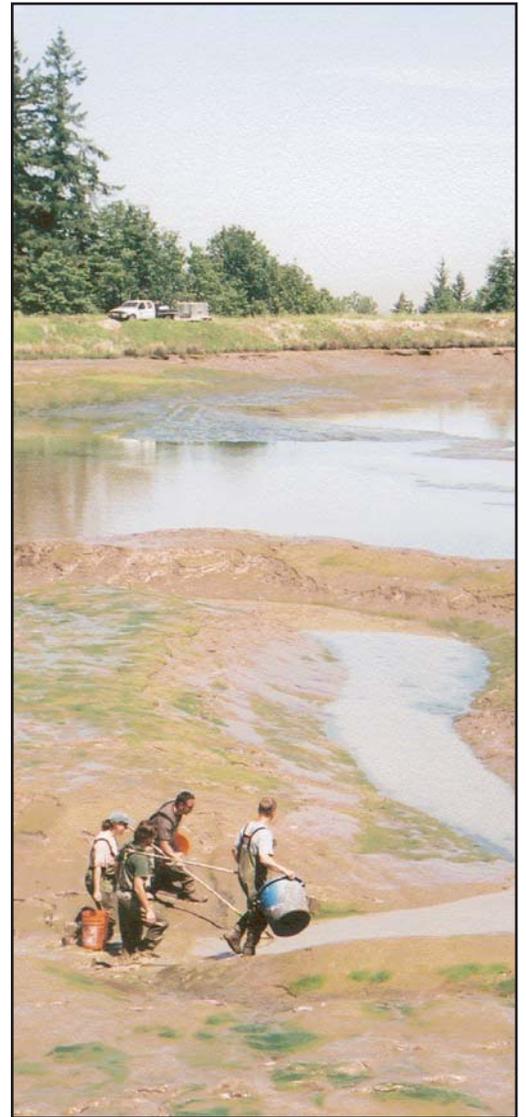
Every summer hundreds of fish are trapped when the Electron Hydroelectric Project is shut down for repairs and its reservoir drained. As water recedes, the Puyallup Tribe of Indians, Puget Sound Energy (PSE) and state and federal agencies must get knee-deep in sediment to save the stranded salmon and trout.

A few years ago, the tribe and the utility built a fish ladder at the project's diversion dam, reopening salmon access to 30 miles of habitat. "This is an unfortunate effect of having such great habitat above where this project diverts water for power," said Russ Ladley, resource protection manager for the Puyallup Tribe. "We see more and more salmon using that habitat up there. Unfortunately, some of their offspring get caught in here."

This year the crews rescued almost 200 coho, five chinook, more than 30 rainbow and four bull trout. Puyallup River chinook salmon and bull trout are listed as "threatened" under the federal Endangered Species Act. For most of the year, the Puyallup Tribe helps PSE operate a fish trap at the reservoir, ensuring migrating fish aren't killed in the turbines.

As the reservoir's level dropped, crews carefully seined the shallow channels carved in the sediment. "We have to be right there to make sure no fish are being left high and dry," said Ladley. "They can die within minutes. Either we're on top of things or it's too late."

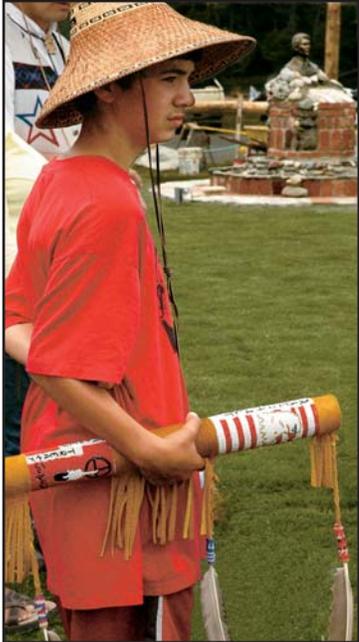
To further jumpstart salmon recovery, every fall the tribe collects surplus adult hatchery coho from the state's Voight's Creek Hatchery near Orting and distributes them throughout the upper watershed. The tribe also releases thousands of juvenile coho and chinook each spring in three rearing ponds in the watershed. "There is no point to restoring salmon in the upper watershed if they're just coming down here and being chewed up," said Ladley. "We did a good job making sure that most of the salmon and trout that did get caught were able to continue their journey." – E. O'Connell



Above, staff from the Puyallup Tribe, Puget Sound Energy and state and federal agencies trudged across knee-deep mudflats to rescue several hundred salmon and trout when the Electron Hydroelectric plant's reservoir was drained for repairs. At far left, Russ Ladley, biologist with the Puyallup Tribe, and crews from Puget Sound Energy and the Washington Department of Fish and Wildlife seine a small inlet at the Electron hydro plant's reservoir.

Photos: E. O'Connell

Quinault Nation Celebrates Treaty's 150th Anniversary



Anthony Capoeaman, 12, stands holding a copy of the Treaty of Olympia that he and a team of runners relayed from Olympia in 24 hours.

A relay team of 13 Quinault Indian Nation (QIN) runners traveled 81 miles in one day to deliver a copy of the Quinault River Treaty to Taholah to mark the celebration of the 150th anniversary of the treaty.

The final runner, 12-year-old Anthony Capoeaman, delivered the treaty, signed by Gov. Christine Gregoire, to Pearl Capoeaman, QIN chair, at Memorial Park in Taholah as part of its dedication. The park honors ancestors and leaders of QIN, in particular Joe DeLaCruz, who championed tribal sovereignty most of his life. A bronze bust of DeLaCruz adorns the park along with other tributes to leaders of the tribe.

QIN members continued the treaty celebration at the Quinault Beach Resort and Casino in Ocean Shores where Capoeaman paid her respects to DeLaCruz and all those who had come before.



Guy Capoeaman, center, Quinault Indian Nation council vice-chair, leads songs during the dinner celebrating the 150th anniversary of the Quinault Treaty, also known as the Treaty of Olympia.

Photos: D. Preston

“We are the seventh generation that our forefathers sought to protect when they signed the treaties,” said Capoeaman. “They were adamant about securing our rights as Indian people, including our inherent sovereignty.”

A re-enactment of the signing of the treaty by descendants of the original signers was a highlight of the event. These included members of the Queets, Hoh and Quileute tribes who signed what is also known as the Treaty of Olympia. Quinault tribal member James DeLaCruz signed in the same manner as his ancestors had signed – with an “X.”

“The treaty is the cornerstone to our sovereignty,” said Clarence Pickernell, QIN tribal member. “We must be ever-vigilant and maintain the political conviction to manage our resources for seven generations.” – *D. Preston*



Journey's End

While thousands watch, a Lower Elwha Klallam tribal canoe prepares to welcome participants in the annual inter-tribal Canoe Journey. More than 60 canoes from the Pacific Northwest and Canada paddled to Port Angeles in August to take part in the gathering. As part of the journey, participants honored Tse-whit-zen village, an ancient Klallam village unearthed during a construction project in Port Angeles.

Photo: D. Preston

Tulalips Mark 100 Years Of Cooperative Enhancement

One hundred years ago, when Tulalip Indians canoed the Snohomish River toward a fish hatchery operated by the State of Washington, they carried wild salmon for a nascent supplementation program. They also brought with them the origins of today's forward-thinking resource management in the basin.

This year marks the 100th anniversary of the Tulalip Tribes' cooperative salmon enhancement program with the state.

"It's a significant milestone," said the Tulalip Tribes' Fisheries and Wildlife Director Danny Simpson. "It shows that we have always been concerned with the future of fish runs, and been willing to work together to protect them."

Hatcheries in the Snohomish basin provide recreational opportunities for sport anglers, income for commercial fishermen and hope for recovering imperiled chinook salmon. Joint hatchery programs and agreements with the Washington Department of Fish and Wildlife (WDFW) on how the facilities are operated ensure that management practices are constantly improving.

'The co-managers here have made great strides in putting cutting-edge science into practice...'

*– Steve Young
Hatchery Manager
Tulalip Tribes*

"Co-management in this area is critical for our hatchery program," said Simpson. "We rely on each other for so much, and our cooperative agreements are helping us achieve salmon recovery."

The tribes have made innovative changes in hatchery policies after consultations between tribal biologists and some of the best state biologists. The Hatchery Scientific Review Group, an independent scientific panel established by Congress, has suggested that the Snohomish could serve as an example of joint action for all other watersheds to follow.

"In this region, we've been able to work well together for many, many years," said the Tulalip Tribes' Terry Williams. "By focusing on what works for fish, we're able to put the most productive policies in place."

Examples abound. To name a few:

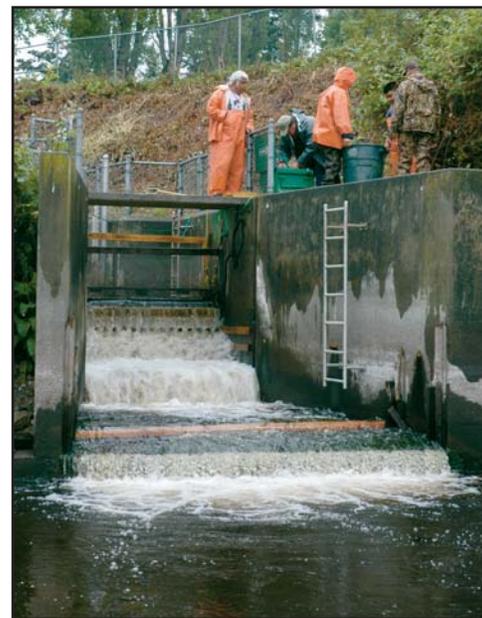
- Following the best available science, the tribes and state have systematically adopted initiatives to preserve the genetic integrity of wild fish. The co-managers began phasing Green River fall chinook eggs out of Snohomish hatcheries in the 1990s, instead opting for local Skykomish summer chinook. By 2004, the tribes and the state were producing no hatchery fish with origins outside of the Snohomish basin.
- Using federal Hatchery Reform funding to the fullest, the tribes undertake various programs to increase fish survival rates. For instance, studies of otoliths (salmon ear bones) and tracking hatchery fish marked with coded wire tags offer valuable information for managers.
- The Tulalip Tribes are also leaders in integrating wild stocks with hatchery broodstock. Though hatchery programs are fundamental to the long-term survival of certain fish runs, when a hatchery salmon mates with a wild fish, undesirable genetic traits may result in offspring. To minimize these risks, the tribes and the state follow federal Hatchery Reform guidelines closely, helping to preserve the genetic integrity of both the hatchery and the natural stock.

In a broodstock program, wild fish are captured and spawned by hatchery staff. The progeny are then reared in the hatchery, resulting in increased survival rates for the fish after release. This type of supplementation program can be an effective means to boost dwindling runs of endangered fish.

"The co-managers here have made great strides in putting cutting-edge science into practice, and in monitoring to be sure what we're doing works," said Steve Young, manager of the Tulalip Tribes' Bernie Kai Kai Gobin Salmon Hatchery. "These are



A century of state-tribal cooperation began at the Skykomish Hatchery in 1905, when Tulalip Indians transferred salmon eggs from the facility to the Snohomish Hatchery for release into the Snohomish River. *Photo: Courtesy Washington Department of Fish and Wildlife*



Staff from the Tulalip Tribes' Bernie Kai Kai Gobin Hatchery prepare to release young salmon from the Lower Tulalip Creek fish ponds. *Photo: J. Shaw*

mutually beneficial programs, since they'll provide us with more fish now and in the future."

At a time when salmon populations are flagging in many areas, robust hatchery production in the Snohomish system allows people to fish – while at the same time advancing the cause of salmon run restoration. Today, 95-97 percent of the Tulalip Bay chinook caught are hatchery fish.

"The tribes and the state have managed to put together a fishery during a time of recovery and tremendous cutbacks. That's a real achievement, and it benefits everyone in the area," said Kit Rawson, senior harvest management biologist with the Tulalip Tribes. – *J. Shaw*

Jimmycomelately Creek Project Completed

It took three years, dozens of partners and millions of dollars to undo what a century of progress did to Jimmycomelately Creek.

For more than 100 years, the creek that flows into Sequim Bay underwent serious alterations. Farmers straightened the stream for irrigation purposes; builders constructed dikes to protect developments; and loggers stripped away vegetation to make space for farmland. All that work eventually led to a straightened stream with a decimated salmon population and a flood-prone highway.

But thanks to a completed restoration project, Jimmycomelately Creek and its estuary no longer show the scars of that previous mismanagement. The massive project, spearheaded by the Jamestown S’Klallam Tribe, transformed the landscape back into a healthy creek and estuary for fish and wildlife, while alleviating seasonal flood problems.

In July, the tribe, along with Gov. Christine Gregoire and other state, federal and local representatives, celebrated the restoration project during a ceremony near Jimmycomelately Creek in Blyn. Work on the project was spread out over three years, and included the digging of a new creek channel, the removal of several roads and structures, and the construction of a new bridge over Highway 101. The project’s cost totaled \$6 million, mostly funded with state and federal grants.

‘Now the next step is to bring back the salmon.’

– Ron Allen
Chairman
Jamestown S’Klallam Tribe

“The enormous size and scope of this project shows you just how important this creek, estuary and bay are to the tribe,” said Ron Allen, chairman of the Jamestown S’Klallam Tribe. “We were



Kurt Grinnell, Jamestown S’Klallam tribal member, returns a salmon back to Jimmycomelately Creek east of Sequim as part of the ceremony celebrating the stream’s restoration. Blessing the event is tribal member Pat Adams. *Photo: D. Preston*

determined to fix this poorly functioning waterway. And with the help of all the other governments, organizations, neighbors and volunteers that contributed to this project, we have done just that. Now the next step is to bring back the salmon.”

Before the arrival of settlers, chum salmon choked Jimmycomelately Creek every summer, providing tribal members a steady source of food. Once farms popped up along the creek, however, all that changed. In the early 1900s, the creek was re-routed, straightened and, eventually, disconnected from the estuary to allow for farmland. Over time, pools – essential for salmon – disappeared along the lower stretch of the creek as gravel filled the channel. Soon after, salmon runs dwindled.

Today, the annual chum salmon return to Jimmycomelately Creek is miniscule. The salmon returning to the stream – Hood Canal summer chum – are listed as “threatened” under the federal Endangered Species Act. The creek and estuary also are home to steelhead and cutthroat trout, along with coho salmon and several species of birds.

To help bring back a self-sustaining population of salmon, the tribe began the ambitious creek restoration project in 2002. The tribe and two state agencies purchased about 25 acres of land at the mouth of the creek. A new meandering channel, which followed the creek’s course more than a century ago, was constructed. Two crumbling railroad bridges also were taken out, and a new bridge for Highway 101 was constructed over the creek.

Landfill and an old road to a former log yard site were removed, creating restored habitat for eelgrass, migratory birds and shellfish. Other roads and structures were removed and the newly created creek side and estuary were also re-planted with native trees and shrubs. The Washington Department of Fish and Wildlife and local volunteers implemented a broodstock recovery program to also help rebuild the chum salmon run.

“We really couldn’t have accomplished this project without the help of all the groups involved, and most importantly the local landowners in the area,” said Byron Rot, habitat biologist for the Jamestown S’Klallam Tribe. – *D. Friedel*

Makahs Thank Chukotka People For Gift Of Whale

Members of the Makah Tribe recently traveled nearly 3,000 miles to the far eastern Russian region of Chukotka to thank its people for a gift that enabled the tribe to harvest a single gray whale in 1999.

The indigenous Chukotka people gave the Makah a share of its annual gray whale quota during the International Whaling Commission's 1997 meeting. "It was just an amazing thing they did for us," said Ben Johnson, Makah tribal chairman.

On Sept. 12, a delegation of 14 Makah tribal members left for a weeklong stay in the remote Chukotka capitol city of Anadyr. The two tribes are exchanging cultural visits to strengthen their relationship. Most recently, the Chukotka native dance troupe Ergyron visited Neah Bay in 2004. A group of traditional marine mammal hunters has visited in the past.

Anadyr, Chukotka is located directly west across the Bering Sea from Nome, Alaska, and is home to 12,000 people. The region's population declined dramatically in the last two decades as high paying government jobs evaporated following the collapse of the Soviet Union. Poverty and hunger are common.

Roman Abramovich, one of the world's richest men, is the new governor of Chukotka. He has enthusiastically supported the relationship between Chukotka and the Makah Tribe, including flying the Ergyron dance troupe to Seattle on his private jet.



Chukotka children gather in front of their apartments in Lorino, a small village on the Bering Strait. Members of the Makah Tribe traveled to the region in September to thank the indigenous people for sharing a portion of their whaling quota, which enabled the Makah to harvest a single gray whale in 1999.

Photo. N. Pamplin, Makah Tribe

"I think our relationship is a part of their desire to reach out to other native cultures and cement those relationships in the U.S. and around the world," said Micah McCarty, Makah tribal councilman. "They are coming out of a period of isolation following the Cold War and now they have more opportunities to reach out."

The trip was made possible by contributions from the Tulalip and Suquamish tribes. "We couldn't have done this without those donations and we are grateful," said McCarty. — *D. Preston*

Tribe Continues Fight To Exercise Treaty Whaling Right

An application by the Makah Tribe for a waiver of whaling restrictions imposed by the federal Marine Mammal Protection Act (MMPA) has been accepted by the National Oceanic and Atmospheric Administration's fisheries service (NOAA Fisheries).

NOAA Fisheries has scheduled three public meetings in October as part of a review under federal environmental law that will eventually lead to publication by NOAA Fisheries of an environmental impact statement (EIS) on proposed gray whale hunting. The process was triggered by the February application by the tribe for the waiver from MMPA.

"We're excited the application was accepted and the process is moving forward," said David Sones, vice-chairman for the Makah Tribe. "At the same time, we're concerned that we have to go through this many hoops and politics for a right that is specifically reserved in our treaty."

Last year, a federal appeals court acknowledged the tribe's treaty right to whale. However, the court ruled that the tribe must comply with the MMPA and obtain a waiver from NOAA Fisheries before it can proceed with a hunt, despite language in the act that says it isn't meant to abrogate any Indian treaty.

The tribe harvested a single gray whale in the spring of 1999 under an aboriginal subsistence quota granted to the United States by the International Whaling Commission (IWC). Since then, however, due in part to ongoing litigation, the tribe has not hunted gray whales.

During the public meetings, NOAA Fisheries will solicit citizen comment on a proposal by the tribe to continue hunting gray whales off Washington's Olympic Peninsula. The comments will be used as part of the preparation of an EIS.

An EIS analyzes the environmental effects of a proposed action — in this case

whaling — and offers alternatives. The typical goal of an EIS is to identify ways to minimize harmful environmental effects of an action.

Under the waiver, the Makah propose to hunt up to 20 gray whales during a five-year period, with a maximum of five whales landed in any one year, subject to any quotas from the IWC.

The public meetings are scheduled for Oct. 5 at the Makah Tribal Council Community Hall in Neah Bay, Oct. 6 at the Vern Burton Memorial Community Center in Port Angeles, and Oct. 11 at the Naval Reserve Building in South Lake Union Park in Seattle. All the meetings will start at 6:30 p.m.

"Although NOAA's review process is likely to be long and difficult, the tribe is confident that its application is supported by good science and will meet all of the requirements of the Marine Mammal Protection Act," said John Arum, attorney for the tribe. — *D. Preston*

Snorkel Surveys Provide Important Information About Salmon, Habitat

Sometimes the best way to learn about fish is to become one. When streams run low and slow in late summer, tribal biologists don snorkel gear to to gather a wide range of important information about salmon and their habitat.

Following are examples of two such efforts.

Hoh Tribe:

“Coho especially seem attracted to my mask,” said Ernie Penn, Hoh tribal member and fisheries technician. “If I’m really still, they swim right up to my face.”

By counting fish and noting where the fish are found in the three different tributaries to the Hoh River, the tribe is getting a good idea of the quality and capacity of habitat for young coho and steelhead.

“We’re not only counting fish, but pools created by downed trees and the fast, shallow sections of water called riffles,” said Joe Gilbertson, fisheries biologist for the Hoh Tribe. “We’re correlating the numbers of fish to the types of habitat where they are found to assess and monitor the productivity of the different habitats.”

Technicians are also recording water temperature, dissolved oxygen and the percentage and type of forest canopy. Gravel size in each section of stream – important for salmon spawning – is also being determined, as well as the amount and location of logs, rootwads and other woody debris that are critical components of good salmon habitat.

In the future, the types of insects and other invertebrates found in different stream sections will be identified. Invertebrates are an important source of food to young salmon. “We know from other studies that we’re likely to find different invertebrates in pools where leaves and other debris accumulate than we will find in the fast-moving sections of the streams,” said Gilbertson. Invertebrate diversity is commonly used to assess the overall health of a stream.

“Long term, these measurements allow you to determine the success of spawning fish in various tributaries,” said Gilbertson. “You can predict the number of fish you would expect to result from a given habitat based on the numbers of spawning fish you counted.” The surveys will allow the tribe to develop a baseline to compare the productivity of various habitats, identify degraded habitat and make good decisions about opportunities for habitat improvement.



Joe Gilbertson, Hoh Tribe biologist, snorkels in a tributary to the Hoh River. *Photo: D. Preston*

“There is no hatchery production of coho on the Hoh River,” said Gilbertson. “Tribal fishermen are completely dependent on the productivity of the watershed’s habitat for their catch. Additionally, the coho stock is a significant part of the British Columbia ocean catch.”

As co-manager of the Hoh River fisheries resource, the tribe hopes to use information gathered during this study to protect habitat quality, evaluate changes to riparian zones, and direct future fisheries enhancement projects.

The three streams of the study are Owl, Anderson and Winfield creeks. Results of the study are being used by the Hoh Tribe and the Pacific Salmon Commission, the implementing arm of a treaty between the United States and Canada to facilitate fisheries planning between the two nations. The stream and snorkel surveys are a part of a \$56,000 PSC grant.

Nisqually Tribe:

The Nisqually Indian Tribe and the South Puget Sound Salmon Enhancement Group are gathering information this summer to gauge the success of salmon habitat enhancement on the lower Mashel River.

According to a paper published recently in the journal *Science*, monitoring is essential to gauging the success of river restoration projects. “Collecting baseline data and monitoring the river before and after restoration is the best way to judge how much we actually restore lost salmon habitat,” said Sayre Hodgson, salmon restoration biologist with the Nisqually Tribe.

Last summer, the tribe and the enhancement group built several logjams on the Mashel, an important feature for juvenile and migrating adult salmon. “Without trees in the river creating logjams, the river will become a hard place for salmon to live,” said



Kyle Brakensiek, Northwest Indian Fisheries Commission, and Florian Leischner, Nisqually Tribe, discuss the results of a snorkel survey in the Mashel River near Eatonville. *Photo: E. O'Connell*

Teresa Moon, project manager for the group. Logjams also trap gravel for spawning and create pool habitat. “Logs build places for adult salmon to rest and juvenile salmon to feed and hide from predators.”

Tribal biologists snorkel the last two miles of the Mashel, before it flows into the Nisqually River. “We’ve found lots of juvenile cutthroat trout and steelhead – both of which like to hang out in riffles,” said Hodgson. Riffles are fast flowing, shallow areas of a stream, and because of a lack of wood in the Mashel, it contains a lot of riffles. “Juvenile coho and chinook, on the other hand, like to hang out in deeper pools, which are created by the scouring action of large wood. We’re hoping to see more coho and chinook when we snorkel this stretch of river after the restoration project.”

Hardwood deciduous trees such as alders, which are the first to grow back after logging, dominate the banks at the mouth of the Mashel. Conifers last much longer when they fall in the water, giving future logjams much more stability. “Re-planted conifers along the streambed will someday fall into the river and create new habitat,” said Moon.

The Mashel River, which enters the Nisqually River just a few miles below Alder Dam, is the most important tributary to the Nisqually in terms of restoring wild chinook salmon, said Jeanette Dorner, salmon recovery coordinator for the tribe. “It’s extremely important for chinook not to be spawning only in the Nisqually River itself, but also in these big tributaries,” said Dorner. “These rivers provide the evolutionary backbone for these salmon. If something were to happen in the mainstem, there would still be salmon living in the Mashel.”

Monitoring salmon habitat restoration projects is just as important as completing the projects themselves. “There is a limited amount of money going into salmon restoration,” said Dorner. “To ensure we make those dollars work hard, we monitor, so we learn what works.

‘We need to concentrate our efforts on repairing what is left of salmon habitat.’

– Jeanette Dorner
Salmon Recovery Coordinator
Nisqually Tribe

“Repairing habitat is key to restoring salmon runs in the Nisqually River watershed,” said Dorner. The tribe has drastically reduced its harvest on the river and limited its catches to salmon produced in two tribal hatcheries. But, that only goes so far, she said. “Further curtailing harvest on hatchery stocks won’t help much in benefiting wild salmon,” said Dorner. “We need to concentrate our efforts on repairing what is left of salmon habitat.” – D. Preston & E.O’Connell



Generations

From left, Rueben Wright Sr., Silas Cross, Ben Wright and George Cross of the Puyallup Tribe of Indians dig clams in the early 1930s at Three Tree Point near the present day Redondo Beach. *Photo: Courtesy Puyallup Tribe of Indians Historical Preservation Office*

Tribes Team Up For River Assessment

Half a map doesn't do anyone much good.

That's why the Lummi Nation and the Nooksack Tribe have teamed up to study the entire South Fork of the Nooksack River, in the hopes that the result maps the way to salmon recovery in the basin.

"Habitat is the key to salmon health," said Merle Jefferson, Lummi Nation's natural resources director. "In order to improve habitat, we have to know as much as we can about where salmon live and what they need to survive. This research is going to help us figure that out."

The work is ambitious and comprehensive, capping off a multi-year tribal effort to boost understanding of how South Fork habitat works and why.

"This work is crucial for two reasons," said Bob Kelly, director of Nooksack Natural Resources (NNR).

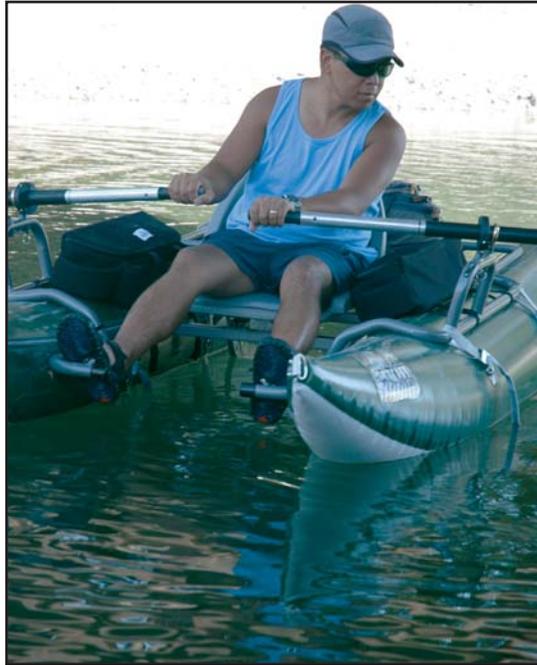
"First, it will help us set the agenda for much-needed restoration work; second, it will help us protect critically endangered chinook salmon."

Building upon prior work, the tribes are aiming to paint a full picture of the critical watershed. With the Nooksack Tribe covering the lower portion of the South Fork and the Lummi taking care of the upper half, examining the river upstream of Skookum Creek.

"The whole purpose of this is to get a handle on what the dominant processes of habitat formation are. That way, we can decide which restoration projects will have the most benefits," said Jim Hansen, director of restoration with the Lummi Nation.

In the upper portion of the watershed, Lummi tribal crews are mapping the deep pools where salmon rest and seek shelter. Often, a cool-water tributary will provide welcome relief for fish that are suffering from warmer temperatures in other areas of the river.

"As adult fish make their way up the river, they're doing so in the teeth of the summer, so they need places to take refuge from the heat," said Michael Maudlin, a Lummi Nation geologist.



Nooksack Natural Resources technician Jim Bura floats the Nooksack River near Acme during a salmon spawner survey. *Photo: J. Shaw*

The data so far are limited, but evidence indicates that chinook salmon in the South Fork take longer to move upriver than North Fork chinook do. This makes refuges from unforgiving temperatures all the more critical.

Besides temperature, research indicates that fine sediment from landslides and a lack of habitat diversity are also limiting the populations of Nooksack River spring chinook, listed as "threatened" under the federal Endangered Species Act. By studying these major limiting factors, tribal and state co-managers will be better suited to decide which habitat restoration efforts will have the most impact.

"We're building on earlier work by the Nooksack Tribe here," said Maudlin. "A series of flights they did in 2001 showed us areas that fish might use for shelter from the heat. As part of our work, we're visiting those sites on the ground."

This highlights the cooperative nature of the work. The tribes collaborated previously on a study of a third area, a stretch of river from the town of Acme east to the Skookum Bridge, called the Acme-Saxon reach. With that project finished, the two tribes could see the goal of a complete picture of the South Fork within reach.

"Tribes working together can accomplish a lot," said Kelly. "Putting our best scientific minds together is the best way to create effective solutions." – *J. Shaw*

Nooksack River Fast Facts

- The South Fork of the Nooksack River drains a 184 square mile area from its headwaters near the Twin Sisters to where it meets the mainstem Nooksack River near Deming.
- Tributaries of the South Fork include Skookum, Cavanaugh, Hutchinson and Jones creeks.
- For restoration planning purposes, the South Fork of the Nooksack River is divided into three reaches:
- The Acme-Saxon reach, from the town of Acme east to the Skookum Bridge. The tribes completed a study of this reach in 2003.
- The lower South Fork reach, from the town of Acme north to the South Fork's confluence with the main stem of the Nooksack River. The Nooksack Tribe has completed field work here and is preparing a report of the findings.
- The upper South Fork reach, covering all areas above the Skookum Bridge. The Lummi Nation is finishing up field work in the reach this summer. The South Fork of the Nooksack River is approximately 40 miles long and runs through both Whatcom and Skagit counties.

Quinalts Measure Results Of Lake Fertilization Effort

Small, silvery sockeye wriggle in the bottom of a fine-mesh net as they are brought aboard a Quinault Indian Nation (QIN) research boat on Lake Quinault. “Their bellies look nice and full,” says Jim Harrison fisheries technician for the QIN.

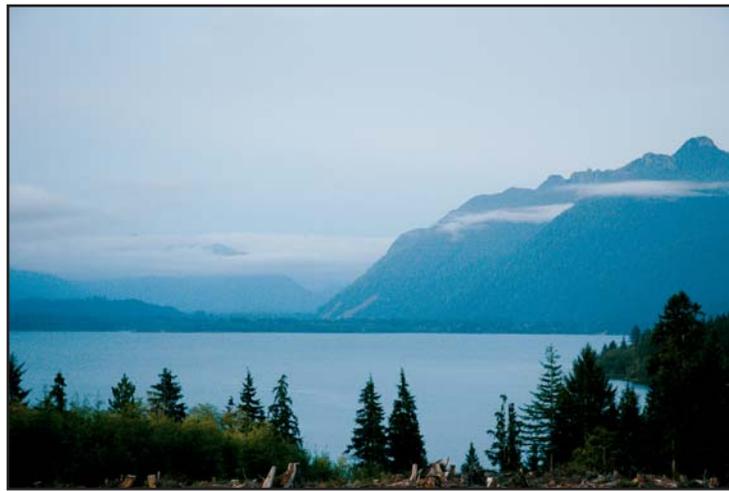
Harrison and two other technicians are spending one night a month for five months collecting samples of young sockeye fry as part of the nation’s effort to measure the success of their lake fertilization program.

This is the second of a multi-year effort to add nutrients to the lake to spur the growth of microscopic plants, which in turn feeds microscopic animals – the preferred food of young sockeye. “We have eight years of pre-fertilization sockeye fry data and our goal during the project is to collect five years worth of data during fertilization to compare growth and fry size,” said Bill Armstrong, fisheries biologist for the QIN. “It’s early in our effort, but it appears that we are seeing an increase in the numbers of prey for the fry to eat and larger young sockeye this year.”

Fertilization of the lake is part of a multi-faceted program to improve sockeye returns to the Quinault River watershed. The QIN identified freshwater production bottlenecks as a major reason for a precipitous decline in sockeye production that accelerated in the early 1990s.



Young sockeye await counting and weighing to help gauge effectiveness of lake fertilization efforts.



The Quinault Indian Nation is conducting a multi-faceted program to improve salmon returns to Lake Quinault.

Photos: D.Preston

As the ability of the lake to support young sockeye improves with fertilization, the nation is also beginning work to improve sockeye spawning habitat in the upper Quinault River and its tributaries.

The nation recently launched the first phase of an ambitious plan to restore salmon habitat in a 9-mile stretch of the Quinault River valley from the mouth of Lake Quinault to the Olympic National Park border.

Given the scope of the work needed and the decades necessary to finish the task, the QIN will likely pursue a 50-year habitat conservation plan (HCP). An HCP will streamline environmental permitting for a myriad of projects from engineered log jams to restoring streamside forests using plantings and forested engineered log jams. Work will begin with a pilot project in 2006.

The nation hopes that the HCP permit, with its ongoing environmental permit, will encourage private landowners to work with the QIN to create fish-friendly solutions to problems such as flooding and erosion.

A \$180,000 federal Pacific Coastal Salmon Recovery Program grant paid for the development and implementation of the plan.

– D. Preston

One Fish, Two Fish. . .

Michael Schrumm, Muckleshoot Tribe fisheries technician, counts sockeye salmon traveling through the Ballard Locks fish ladder and into Lake Washington. The tribe has been tracking salmon passage at the locks for more than a decade. Biologists believe that poor ocean food supplies caused too few sockeye to return this year, precluding large scale fisheries.

Photo: E. O’Connell



Invasive Plants Targeted On Dungeness

Jamestown S’Klallam Tribal crews this summer are combing the Dungeness River for two invasive weeds – knotweed and buddleia. Both are aggressive, non-native plants and both are a serious threat to salmon habitat along the river in Sequim.

“These weeds establish themselves quickly and out-compete native plants that are important for creating and maintaining fish habitat along the Dungeness River,” said Hilton Turnbull, Forest and Fish biologist for the Jamestown S’Klallam Tribe, while injecting a knotweed cane with an herbicide-filled, needle-tipped gun. “What we are doing is mapping the weed occurrences and monitoring how effective our treatment methods are for control from one year to the next.”

Knotweed and buddleia are often used as ornamental plants for gardens. Knotweed, which can grow as large as 20 feet tall, comes from Asia and is commonly known as “false bamboo.” The plant has large oval shaped leaves with pointed tips and produces clusters of tiny white flowers. Buddleia also comes from Asia, as well as Africa, and is commonly referred to as “butterfly bush.” Buddleia, which resembles a green shrub, grows as large as knotweed and produces a cone-shaped cluster of purple flowers.

While the plants might be popular with gardeners, they are a bane to habitat biologists. Both weeds degrade fish habitat by spreading rapidly and taking over large stretches of the riverbank, impeding the growth of important native plants, such as cottonwood and cedar. Cottonwood and cedar trees are essential for healthy salmon spawning and rearing habitat. Trees provide shade that cools the water, keeping it at an ideal temperature for fish, and, over time, those trees will fall into the stream helping create pools and riffles for spawning salmon.

To retain the benefits of a healthy riparian – streamside – ecosystem and ensure invasive species do not take over the river, Turnbull and his crew are surveying the river and floodplain by mapping the weeds with a Global Positioning System. So far, they have mostly concentrated on knotweed, but plan on battling buddleia in the next year. After documenting the knotweed, larger canes are injected with herbicide and smaller stalks are sprayed.

The Jamestown S’Klallam Tribe’s project, which includes public outreach to landowners who might be unknowingly contributing to the problem, is funded by a U.S. Environmental Protection Agency grant. Clallam County is supplying herbicide and technical assistance through a cooperative agreement with the tribe. The county also is helping with other tribal invasive species control projects on the North Olympic Peninsula. That has allowed tribes to allocate more grant funding for control and monitoring efforts.

Mechanical methods of removal don’t really work for these plants. In fact, mowing or chopping the invasive weeds only helps them spread. And that’s partly how they became a problem on the Dungeness River. All it takes is a small stem or root to escape



Hilton Turnbull, a biologist for the Jamestown S’Klallam Tribe, checks the coordinates of a dead knotweed bush on a Global Positioning System.

Photos: D. Friedel

from a knotweed bush to create a colony. Stems float down the river, anchor themselves to the riverbank and begin growing. Buddleia spreads itself by seed after it flowers.

“Knotweed canes and buddleia seeds move around the river pretty readily,” Turnbull said. “Flooding scours plant material and deposits it among logjams, on gravel bars and throughout the maze of side channels in the floodplain.”

Almost nine miles of the Dungeness River needs to be mapped and treated for the weeds. That’s a considerable distance, but compared to the Dickey and Hoh rivers on the Washington coast, it’s rather small. Coastal tribes are trying to tackle the knotweed problem on those rivers, where the weeds have exploded along the riverbanks covering nearly 30 miles in one case.

“Based on this year’s survey results, we are seeing a reduction in area and distribution of the knotweed infestation, but we’ve really got our hands full with buddleia; in some cases it is the dominant woody vegetation on gravel bars and along the forest,” Turnbull said. “All the tribes and local governments on the west side of the Olympic Peninsula are doing their best to address the invasive plant species and prevent their reintroduction into our river systems.” – D. Friedel



Turnbull injects a knotweed cane with an herbicide-filled, needle-tipped gun.

Tribe Works To Restore Rare Oyster

Standing next to a mound of oyster shells on the bow of the Suquamish Tribe's barge, Paul Williams arms himself with a fire hose and gives his shipmate the go-ahead.

"Alright, turn it on!" yells Williams. A generator roars to life and out sprays a stream of water from the hose. Williams, the shellfish program manager for the Suquamish Tribe, aims the powerful stream at the hill of shells and blows them into the waters of Liberty Bay near Poulsbo. If all goes according to plan, those shells will soon be covered with maturing Olympia oysters, the highly savored and nearly extinct oyster of Puget Sound.

"We chose a site in the bay where a small population of Olympia oysters still exists, and it is our hope that their offspring will attach themselves to this layer of shells and begin to repopulate the area," Williams said.

About 5,000 square feet of state-owned tidelands was covered with 100 cubic yards – or about 10 dump truck loads – of Pacific oyster shell. It took the tribe, project coordinator Puget Sound Restoration Fund and Hood Canal Oyster Company two days to unload all the shell in the bay. The state Department of Fish and Wildlife also helped with the project.

Unlike other Olympia oyster restoration attempts, this project did not begin with Olympia oyster larvae already attached to the Pacific oyster shells. Those projects often involve attaching the larvae-covered shells on ropes suspended in water. The ropes keep the oysters above the muddy bottom but below the surface of the water – ideal conditions for the shellfish. Instead, the Suquamish Tribe and the Puget Sound Restoration Fund are hoping juvenile Olympia oysters, which are free-floating in the early stage of development, will attach themselves to the Pacific oyster shells.

The Olympia oyster, the only native oyster to western Washington, is small compared to the Pacific oyster. An average



Paul Williams, shellfish program manager for the Suquamish Tribe, hoses Pacific oyster shells into Liberty Bay while Debbie Barton, shellfish coordinator for the tribe, pushes the shells overboard with a rake. *Photo: D. Friedel*

Olympia oyster is only 2-inches wide and 2-inches long, whereas a Pacific is about double that size. What it lacks in size, however, it makes up in taste; the Olympia oyster is considered a delicacy throughout the world.

Consumer demand for the Olympia oyster, along with water pollution and overharvest, has taken a toll on the shellfish. In the mid-1800s, a voracious appetite throughout the West for the shellfish was so great that the population was nearly harvested to extinction. As demand continued to grow, the Pacific Northwest shellfish industry began importing and cultivating

Pacific oysters from Japan. Pacific oysters quickly took over cultivated beds that were once populated with Olympia oysters.

Demand was only part of the problem, however. Industry, such as pulp and paper mills, spilled chemicals into nearby waterways, polluting Olympia oyster beds and decimating the resource.

"I'm optimistic that with more restoration projects we can bring back an Olympia oyster population that can support tribal and non-tribal harvests in the future," Williams said. "This is a treasured resource that needs our help and deserves our attention." – *D. Friedel*

Sol Duc Summer Chinook Get Checkup



Young summer run chinook salmon float through the air as they are pumped into the Sol Duc River. *Photo: D. Preston*

In early summer, two runs of chinook salmon converge on the Sol Duc River.

The abundant spring chinook run begins returning in late April. It's a pure hatchery stock introduced by the State of Washington in the 1970s that returns to a hatchery on the Sol Duc where eggs and milt are collected, and young fish reared for release in the river.

The summer chinook run begins returning in July. This is a depressed run that has been supplemented by the Quileute Tribe for 20 years. Tribal technicians capture adult broodstock in the river between July and September and raise the offspring in a hatchery to increase survival rates. The young fish are released in early summer, returning as adults in four to six years.

But because a small number of the two stocks intermingle on the spawning grounds, the overall health of the summer run is impossible to determine, complicating efforts to improve it.

The Quileute Tribe wants to determine to what extent the spring hatchery stock

is supporting the summer run. By inserting coded wire tags in up to 200,000 summer supplemented chinook prior to their release for at least six years, and hopefully longer, the tribe will get one part of the picture.

"Tagging these fish over a number of years will give us a definitive tool to measure our performance," said Dahnielle Buesch, hatchery manager for the Quileute Tribe. "We can make changes in our operations to improve returns and see if they work over time."

Meanwhile, to further determine the extent of mixing between the two runs, the tribe is collecting tissue samples for genetic analysis. Funding for that work is still being sought.

"It's going to take time and dedicated resources to determine if the hatchery run is adding a benefit to the naturally returning summer stock," said Mel Moon, tribal natural resources director for the Quileute Tribe. The tribe has opposed repeated attempts to close the state hatchery because

of the possibility that the spring hatchery run is helping to sustain the summer run. "We would like to know with some degree of certainty what impacts plus or minus, we may be causing before we commit to those kinds of decisions."

Additionally, state hatchery staff and Quileute tribal hatchery staff work cooperatively and the tribe uses parts of the state facility to complete rearing of the summer chinook prior to their release. "The staff at the Sol Duc Hatchery is great. They are a great help to us," said Buesch.

The \$15,000 cost for the tagging effort comes from the Hatchery Scientific Review Group, an independent scientific panel that guides the Hatchery Reform Project. The project, launched by Congress, is a systematic, science-driven examination of how hatcheries can help recover and conserve naturally spawning salmon populations and support sustainable fisheries. — *D. Preston*

Squaxin Island Tribe Eyes Johns Creek Summer Chum Run

The timing of when the first summer chum salmon enter Johns Creek could shine a light on how the small stream can be protected.

This year the Squaxin Island Tribe is surveying Johns Creek for a unique population of early arriving or “summer” chum.

“If chum are coming back to Johns Creek in late August, way before they enter the streams in large numbers later in the fall, that means there is enough water and good habitat for them,” said John Konovsky, environmental program manager for the Squaxin Island Tribe. “We should try to protect that for them. In August, there is a lot of seal activity in Oakland Bay, so we know there are salmon out there, just off the mouth of Johns Creek,” said Konovsky.

“We don’t know how early they enter the creek. State fishery managers survey for spawning fish starting in early to mid-September, but no one has systematically surveyed in August.”

Unlike many salmon that wait for fall rain before they move into streams and rivers, summer chum move upstream before the rains. “Because summer chum don’t wait for rain to swell creeks, they depend on the water that is in these creek year round,” said Konovsky. “That kind of water typically is groundwater and it is very cold.”

As Mason County grows, Johns Creek will feel much of the development impact. “Increased demands for water throughout the Johns Creek watershed will put the already small num-



Joe Puhn, fisheries technician for the Squaxin Island Tribe, surveys Johns Creek for summer chum. *Photo: E. O’Connell*

ber of summer chum that spawn here at risk,” said Konovsky. “Increased stormwater runoff because of paving in the Johns Creek watershed will also push more water into the creek during the winter rains, not letting it be stored as groundwater for summer flows.”

Even if summer chum have enough water to move into Johns Creek, the water can still be lethal. “It’s not uncommon for salmon to die in freshwater before they spawn because of warm water temperatures,” said Konovsky.

Most summer chum throughout the Puget Sound are either already extinct or in decline. The largest population, Hood Canal and Strait of Juan de Fuca summer chum are listed as “threatened” under the federal Endangered Species Act. “Johns Creek summer chum have been able to hang because of the cool water in the stream,” said Konovsky. “But impending development in the watershed threatens to cut off the water supply.”

– E. O’Connell

Home Improvement

Donald Penn, Quileute habitat technician, tosses branches into a pile for later burning as part of a cooperative elk habitat improvement project in the Sol Duc River basin. Removing brush encourages growth of plants that make up the elk food supply. The project is being conducted on U.S. Forest Service land that lies within the tribe’s customary hunting area.

Photo: D. Preston



Hatchery Coho Focus Of Tribal Projects

The Port Gamble S’Klallam Tribe is conducting two projects to better understand how hatchery coho salmon return to Port Gamble Bay and nearby Hood Canal streams.

“We want to really know what is truly happening with these hatchery coho populations: when they return, where they are going, and how they affect other salmon stocks,” said Cindy Gray, finfish manager for the Port Gamble S’Klallam Tribe. The tribe rears a hatchery coho stock from the Quilcene National Fish Hatchery at the Port Gamble Bay net pens.

To find out exactly what those fish are doing, the tribe is combining information from a Port Gamble Bay test fishery with a new genetic study. Coupling information from the two projects will help the tribe determine the best way to manage hatchery coho salmon fisheries with minimal risks to wild salmon stocks.

The test fishery, which involves setting a gillnet in the same spot in Port Gamble Bay twice a week from July 31 through Oct. 6, gives the tribe an idea as to when hatchery coho move into the bay, when the run peaks, and what other species of salmon are mixed with the returning coho. This is the final year of the three-year test fishery project.

The new genetic study, which begins this fall and also will run for three years, builds on an existing effort of tribal crews surveying spawning grounds. Those crews will walk nearby streams and collect genetic samples from salmon carcasses, taking a tissue sample from each salmon’s gill cover and also checking each carcass for an adipose fin and a coded wire tag.



Tim Seachord, hatchery manager for the Port Gamble S’Klallam Tribe, hauls in a salmon during a test fishery in Port Gamble Bay. *Photo: D. Friedel*

As juveniles, Port Gamble Bay hatchery coho salmon have their adipose fin removed and a coded wire tag inserted in their nose to distinguish them from wild coho. The tag contains information on when the fish was released and where the fish was reared.

The study is funded by a \$104,000 Pacific Coastal Salmon Recovery grant from the National Oceanic and Atmospheric Administration.

The genetic study will initially focus on eight northern Hood Canal streams: Martha John, Little Anderson, Seabeck, Stavis, Shine, Thorndyke, Tarboo, and Rocky Brook creeks. The tribe also will collect information on juvenile salmon on Little Anderson, Big Beef, Seabeck and Stavis creeks. The juvenile salmon study is in conjunction with U.S. Fish and Wildlife Service.

By studying salmon carcasses, the tribe can determine how hatchery and wild coho populations interact, and if that interaction is harming wild coho or any other salmon species such as summer chum. The Hood Canal summer chum population is listed as “threatened” under the federal Endangered Species Act.

“These projects will help us determine the best way to manage hatchery fish, and properly adjust our fisheries,” Gray said. “The key here is to provide fishing opportunities in the northern Hood Canal area while protecting the wild coho population along with other salmon species. The more we know about these different stocks of hatchery salmon, the better management decisions we can make.” – *D. Friedel*

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