



Northwest Indian Fisheries Commission

NWIFC News

Summer 2013

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Fish Consumption Rate Unjust



By Billy Frank Jr.
NWIFC Chairman

Medical experts say eating a Mediterranean diet that's high in fruits, vegetables, nuts, olive oil and fish is one of the best things we can do to reduce our risk of heart attack and stroke. Eating more fish and other seafood is a healthy choice as long as those foods don't come from polluted waters. We think the state of Washington needs to make sure our waters stay clean.

Washington uses one of the lowest fish consumption rates in the country – about 6.5 grams a day, or one 8-ounce fish meal a month – to set rules for how much pollution that industry can put in our waters. That rate is supposed to protect us from more than 100 toxins that can make us sick or kill us, but it was set more than 20 years ago. Even the state Department of Ecology recognizes that the inaccurate rate does not protect most of us who live in Washington, a state with one of the largest populations of seafood consumers in the country.

We should not face an increased risk of illness from toxic chemicals when we try to improve our health by eating seafood. Washington's fish consumption rate should be at least as protective as Oregon's, which has been raised to 175 grams, or about one fish meal per day. Plenty of scientific evidence supports an increase to that amount or more.

Treaty tribes have been trying for years to get Ecology to update the fish consumption rate. Our health and our treaty rights depend on our food being safe to eat.

Work to raise the rate finally began last year, but about halfway through the process, Ecology did an about-face and progress skidded to a halt. The cause? A phone call from industry representatives who said revising the rate would be bad for our economy because it would increase the cost of doing business.

We're trying to get the process back on track, and remain hopeful that Gov. Inslee and new Ecology Director Maia Bellon can help make it happen. We're also working

with the U.S. Environmental Protection Agency to form a government leadership group to move forward.

It's not going to be easy, though. We're up against some powerful interests.

Opponents claim federal water quality standards in place here already protect all of us. But how can that be, if we know the fish consumption rate is wrong? Their answer is that existing rules can include a larger fish consumption rate as long as those who eat more fish accept a higher risk of getting cancer.

Imagine that. What they're saying is that most people in Washington would be protected by a rate of risk that one in one million people will get cancer from toxins in water. But for anybody who eats more than one seafood meal per month, including Indians, Asians and Pacific Islanders, that risk rate can be as high as one in 10,000. That's unacceptable. Current state law requires cancer risk rates to protect everyone at the rate of one in a million. That standard should remain unchanged.

There's no question that seafood is good for us, but it won't be that way for long if pollution is allowed to contaminate the waters it comes from. It is unjust for Indian people and others who consume a lot of seafood to be at greater risk for getting cancer than everyone else.

Developing a more realistic fish consumption rate and keeping risk standards in place to protect our health is a matter of justice – social justice and environmental justice – for everyone who lives here. None of us deserves anything less.

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Northwest Indian
Fisheries Commission
6730 Martin Way E.
Olympia, WA 98516
(360) 438-1180

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NWIFC Chairman
Billy Frank Jr.

Executive Director
Mike Grayum

**Information and Education
Services
Division Manager**
Tony Meyer

Regional Information Officers
Debbie Preston, Coast
Emmett O'Connell, South Sound
Tiffany Royal, Hood Canal/
Strait of Juan de Fuca
Kari Neumeyer, North Sound

NWIFC Member Tribes: Hoh, Jamestown S'Klallam, Lower Elwha Klallam, Lummi Nation, Makah, Muckleshoot, Nisqually, Nooksack, Port Gamble S'Klallam, Puyallup, Quileute, Quinault Indian Nation, Sauk-Suiattle, Skokomish, Squaxin Island, Stillaguamish, Suquamish, Swinomish, Tulalip and Upper Skagit

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On the cover: Aaron Johnson, a Skokomish Tribe natural resources technician, seines a small channel in the Skokomish tidelands. The tribe regularly seines the tidal channels to study the marine life and salmon using the newly restored estuary in Hood Canal. *Photo: T. Royal*



E. O'Connell (2)

Bear Lewis, Squaxin Island, reaches deep into the muck to harvest geoduck clams during low tide south of Hunter Point.

Short Window for Intertidal Geoduck Harvest

By the time Bear Lewis reaches the geoduck in the muck, his entire arm is down a hole. Using pressurized water from a wand-like device called a “stinger,” Lewis loosens the sand around the world’s largest burrowing clam, but he still has to pull it out.

“Every time you try to dig one of these out, they try to get away from you,” Lewis says.

Geoduck typically are harvested by divers who operate from boats, but Lewis, a member of the Squaxin Island Tribe, is participating in an intertidal geoduck dig in deep South Sound. These tribal intertidal geoduck harvests are uncommon, in part because they must happen within a short low-tide window.

“We have to work as the tide is going out so we can dig the clams before they’re covered back up,” Lewis says. In all, Lewis digs for only about 90 minutes, but in that time, he harvests about 100 clams.

This particular dig also helped the tribe’s shellfish biologists answer some questions about local geoduck populations and harvest management. As part of a process to enable the beach owner to plant a commercial geoduck bed, the tribe has to figure out how many naturally growing geoduck there are.

“Even after geoducks are planted commercially, the tribe has an ongoing right to harvest half the natural set,” said Eric Sparkman, shellfish biologist for the tribe.



Lewis has a 90-minute window before the tide comes back in. During that time, he harvests about 100 geoduck clams.

The treaty tribe’s right to half the natural shellfish was reaffirmed in the 1995 Ra-feedie decision.

“The only really good way to find out how many geoduck there are, or even if there are enough to sustain a commercial harvest, is to take them all out of the ground,” Sparkman said. In this case, the tribe harvested all of the available geoduck under a cooperative tideland harvest agree-

ment and paid the owner for their share.

“It’s a lot of hard work, but being able to see all those geoducks lined up is really encouraging,” Lewis said. “It reminds you that our people have been depending on this resource for a long time.”

– E. O'Connell



K. Neumeyer (2)

Swinomish biologist Julie Barber measures and counts juvenile manila clams during a survey of Lone Tree Point.



Barber, left, and Swinomish natural resources technician Courtney Greiner survey juvenile manila clams on Lone Tree Point.

Swinomish Seeds Beach for Subsistence Clam Harvest

The Swinomish Tribe is developing a subsistence manila clam fishery on Lone Tree Point.

“We’re using habitat we already have to increase opportunities for our tribal members to gather shellfish,” said Lorraine Loomis, fisheries manager for the tribe. “Shellfish always have been part of our traditional diet and culture.”

In 2011, shellfish biologist Julie Barber seeded five test plots totaling 1,000 square feet with good survival results. Last summer, tribal members and staff seeded an

entire acre of varied beach habitat north of the lone tree that gives the beach its name.

“This beach includes areas of desirable habitat such as sand and gravel, as well as areas of mud and fine silt, which is poor manila clam habitat,” Barber said. “Because the tribe will not be enhancing the poor substrate with gravel, as many commercial growers do, we avoided seeding these areas. Since the 2012 seeding, we have been monitoring survival and growth throughout the seeded area to determine how survival differs along the beach by lo-

cation and elevation.”

Manila clams are a staple of many tribal shellfish programs because they survive at higher elevations in the intertidal zone than native littleneck clams, and are found in a shallower depth, so they are easier to dig. They reach a harvestable size two or three years after planting.

So far, survival seems to be better on the southern part of the beach, so the tribe plans to concentrate its efforts there. Some of the clams from the 2011 test plots could be harvested as soon as next summer.

– K. Neumeyer

Quinault Nation Harvests Razor Clams for Canoe Journey



D. Preston

Quinault Pride Seafood employees collect and weigh razor clams from tribal members during a commercial razor clam dig near Ocean City.

One of the iconic foods of the Quinault Indian Nation will be available to share with the thousands of people who will gather in Taholah for the 2013 Canoe Journey from Aug. 1 to Aug. 6.

Tribal members collected razor clams in several ceremonial digs. The clams were frozen so they can be served during the week-long Canoe Journey celebration.

“I can’t imagine hosting the Canoe Journey without razor clams,” said Lisa Sampson-Eastman, who has been digging clams since she was 11 years old. “My sister Sabrina and I learned to dig clams from our dad, Charles Sampson.”

Historically, Quinault tribal members used pliable yew sticks to tease the evasive

mollusk from its hole in the sand. Today, tribal members use clam shovels to efficiently harvest for ceremonial, subsistence and commercial uses. As co-manager of the resource, the nation also shares surveying duties with the state Department of Fish and Wildlife, protecting razor clams for the future. Surveys of the clam populations are under way now, following the harvest season.

Quinault Pride Seafood purchases the clams from tribal members, providing income for many who are not yet working in seasonal jobs that begin in early summer. The clams are sold for public consumption and bait for fishermen.

– D. Preston

Skokomish Tribe Upgrades Lab

The Skokomish Tribe is upgrading its water quality lab to a state-of-the-art facility.

The tribe recently purchased high-end lab equipment from the Shoalwater Bay Tribe to conduct more sophisticated work, such as looking for cancer-causing compounds.

“It’s a major deal for Hood Canal,” said Ron Figlar-Barnes, the Skokomish Tribe’s Environmental Protection Agency coordinator. “We’re bringing high-end water quality equipment to a more centrally located area.”

The Shoalwater Tribe used the equipment to research toxins causing reproductive issues in tribal members.

“We haven’t had a need for it lately though, so now we’re able to pass it on to someone else,” said Gary Burns, director of the Shoalwater Bay Tribe’s environmental program.

Without the new equipment, the Skokomish Tribe could test water samples only for dissolved oxygen, *e. coli*, phosphorus, nitrate, nitrite and ammonia. Once the advanced lab is set up, which is expected to be within a year, the tribe will be able to expand testing to include fish and shellfish tissue.

“We’re not going to limit ourselves,” said Skokomish Chairman Guy Miller. “We’re going to use it in every way we can to help our people, our community and our natural resources.” – *T. Royal*

Shoalwater Bay Tribal Chair Charlene Nelson and Skokomish Tribal Chairman Guy Miller sign the agreement for the Skokomish Tribe’s purchase of high-end water quality testing equipment.

T. Royal



E. O’Connell

Joe Puhn, environmental program technician for the Squaxin Island Tribe, samples algae at Arcadia Point.

Algae Surveyed for Link to South Sound Coho Survival

Could toxic algae in South Sound be killing salmon before they migrate to the open ocean?

The Squaxin Island Tribe is researching a possible connection between algae blooms in deep South Sound and the recent decline in coho returns. It is possible that toxic algae could be weakening salmon by damaging their gills, making them more likely to die from disease.

“In the 1980s, marine survival for these fish was up nearly as high as 30 percent,” said Scott Steltzner, salmon research biologist for the Squaxin Island Tribe. “Suddenly it decreased and now it seems to have stabilized in the low single digits, and no one is sure why.”

In a recent study, the tribe fitted 175 young coho, both hatchery and natural origin, with acoustic tags. Only six were tracked beyond the Tacoma Narrows Bridge.

This summer, tribal researchers will make a general survey of algae in deep South

Sound, looking for species that could harm salmon. If they find any, they’ll expand the research to look for salmon in the same places as toxic algae. They can track coho closely throughout the area by inserting acoustic tags into salmon released from the tribe’s net pen facility in Peale Passage.

“If we see a decline in health in the fish as they encounter algae, we can start drawing a line between coho and algae,” Steltzner said.

Algae blooms are caused by abundant sunlight, nutrients and certain water conditions. Blooms in Puget Sound have worsened in recent years by the widespread use of chemical lawn fertilizers, which add extra nutrients to marine waters.

“The low runs of coho have a massive impact on the tribe’s economy and culture,” said Andy Whitener, natural resources director for the tribe. “We hope this research will bring us closer to restoring these runs.” – *E. O’Connell*



E. O'Connell



K. Neumeyer

Across Puget Sound, Tribes Test for Toxins

The Jamestown S’Klallam, Nisqually, Squaxin Island and Stillaguamish tribes are participating in the SoundToxins monitoring program to provide early warning of harmful algal blooms (HAB) and outbreaks of bacteria that could sicken humans.

“We want to make sure shellfish are safe to consume, not just for tribal members, but for all seafood consumers,” said Sue Shotwell, shellfish farm manager for the Nisqually Tribe.

During the shellfish growing season from March to October, tribal natural resources staff sample seawater weekly at designated sites. Additional sites across Puget Sound are monitored for toxin-producing algae by various citizen beach watchers, shellfish farmers, educational institutions and state government agencies. The monitoring results are posted in an online database at soundtoxins.org.

The SoundToxins program helps narrow down the places where shellfish should be sampled for toxins, which is more expensive and time-consuming than testing the water.

“Just because we find algae that produce toxins doesn’t necessarily mean there are toxins in the seafood, but it could mean there will be soon,” said Stillaguamish marine and shellfish biologist Franchesca Perez. “If high numbers of an HAB species are found, then a sample of the water is sent to SoundToxins for further analysis, and appropriate parties are

contacted to protect consumers and growers. We also look for *Heterosigma*, a plankton that causes fish kills.”

The Stillaguamish Tribe is sampling Kayak Point in Port Susan. Nisqually is monitoring the water at Johnson Point in Olympia. Squaxin Island is monitoring a site at Arcadia Point, and the Jamestown S’Klallam Tribe is taking its samples from the dock at Sequim Bay State Park, a popular shellfish harvesting site.

“Sequim Bay has had a number of harmful algal blooms historically,” said Neil Harrington, Jamestown S’Klallam Tribe environmental biologist. “When we see the phytoplankton cells increase in the water column, we know to start increasing shellfish sampling for toxins.”

All three types of plankton that cause HABs in Puget Sound have been measured at toxic levels in Sequim Bay.

SoundToxins is managed by the National Oceanic and Atmospheric Administration’s (NOAA) Northwest Science Center, Washington Sea Grant and the Washington Department of Health.

“The program aims to provide sufficient warning of HAB and *Vibrio* events to enable early or selective harvesting of seafood, thereby minimizing risks to human health and reducing economic losses to Puget Sound fisheries,” said SoundToxins program director Vera Trainer of NOAA’s Northwest Fisheries Science Center. — K. Neumeyer, E. O’Connell, T. Royal



T. Royal

Tribal natural resources staffers sample water for the SoundToxins program. Top right, Stillaguamish biologist Franchesca Perez collects water from a pier at Kayak Point. Top left, Nisqually natural resources technician Jimsan Dunstan samples water at Johnson Point in Olympia. Above, Jamestown environmental biologist Neil Harrington takes a water quality sample from Sequim Bay.

Carkeek partnership in 10th year

In the 10th year of a successful program, the Suquamish Tribe donated 50,000 chum salmon fry to the Carkeek Watershed Community Action Project, supporting the effort to teach the public about salmon and why it's important to keep streams clean.

The fish were donated in March and kept in a large swimming pool at the end of a trail on Piper's Creek until released in April. Volunteers, from retirees to entire families, fed the fish three times a day until they were released.

About 700 people came up the trail in 2012, said volunteer coordinator Bill Hagen. Because it gets a lot of traffic, it's a good place for both children and adults to learn about salmon.



Volunteer Bernadine Folz mulches a garden at Heronswood.

T. Royal

Tribe to restore Heronswood garden

The Port Gamble S'Klallam Tribe is restoring the internationally known botanical gardens at Heronswood.

The tribe purchased the 15-acre property near the tribe's reservation in July 2012 mainly to preserve it for the community. Heronswood was established in the late 1980s by local horticulturist Dan Hinkley, and gained global recognition as a nursery of rare plants collected from around the world.

The tribe's goal is to restore the gardens back to their previously acclaimed level but also to reflect tribal ownership, culture and traditions, said Laurie Mattson, executive director of the Port Gamble S'Klallam Foundation, the non-profit arm of the tribe overseeing Heronswood.

There has been discussion about developing traditional and medicinal plant gardens as well as opening the grounds to private events, Mattson said.



E. O'Connell

Annette Bryan, director of the Puyallup Tribal Housing Authority, and resident Ted Franzen chat outside the new environmentally friendly building.

Puyallup opens Place of Hidden Waters

The Puyallup Tribe of Indians' housing authority has opened The Place of Hidden Waters, an environmentally friendly 10-unit housing complex that emulates the traditional longhouse design.

"It was important that the building be culturally relevant to the tribe," said Annette Bryan, executive director for the housing authority.

The building's temperature control system uses the moderate soil temperatures to cool the building in the summer and warm it in the winter.

"The energy efficient design of the building literally includes hidden waters," Bryan said.

The longhouse project also used recycled and local sustainable construction material. Rainwater from paved areas of the development are filtered through a rain garden, instead of into a traditional stormwater drainage system.

Golf Course designated Salmon Safe

The decision seven years ago by the Squaxin Island Tribe to recycle wastewater from its reservation has led to low-impact economic development, including the first ever "Salmon Safe" golf course.

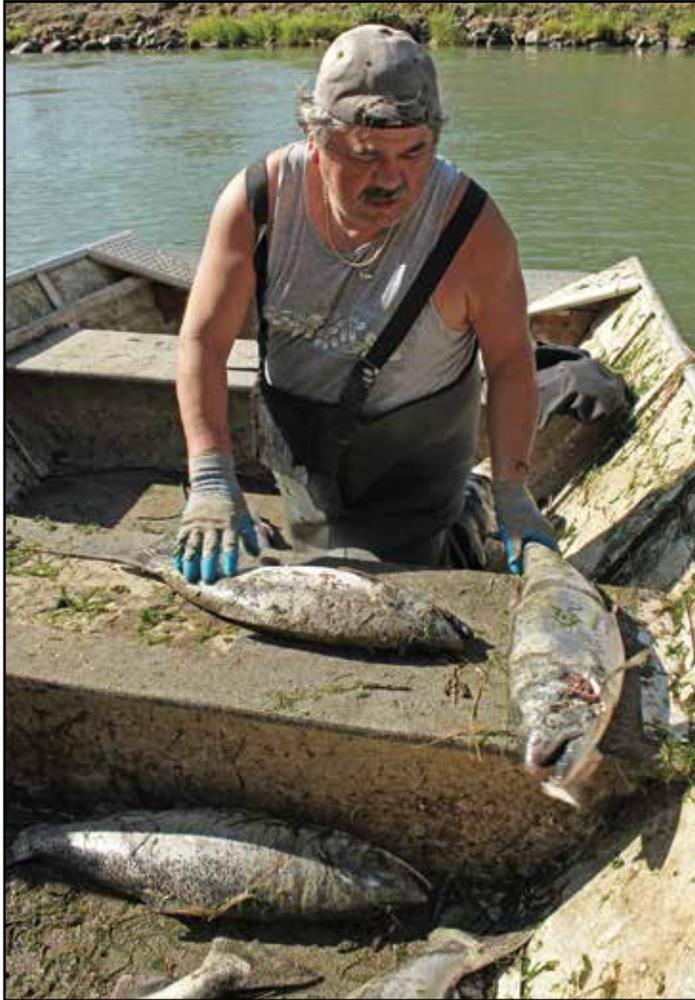
"We've paid close attention to the ecological impact we have while we expand the economic base of the tribe," said Andy Whitener, natural resources director for the tribe.

The new 320-acre course includes features that decrease the impact on spawning and rearing salmon. It uses the tribe's water reclamation system, built in 2007 to take wastewater from throughout the tribe's reservation, treat to the highest standard, then use it for irrigation.

The Salmon Safe certification process was carried out independently by the non-profit Stewardship Partners.

Tribes Try Alternative Fishing Gear

Treaty Indian tribes in western Washington are experimenting with fishing methods that help conserve depressed salmon and steelhead stocks. The Nisqually Tribe began using alternative gear a few years ago, and this spring, the Lummi Nation and Upper Skagit Indian Tribe both held tangle net fisheries. Tangle nets are similar to gillnets, but have a smaller mesh size.



E. O'Connell

Benji Kautz, Nisqually Tribe, unloads chinook during the tribe's fishery last fall.

Nisqually Tribe uses tangle nets, beach seines to reduce impact on chinook

The Nisqually Indian Tribe will continue to lower impacts on returning chinook salmon this year.

"To make good on our recent gains in habitat restoration in the Nisqually, fishermen need to decrease how many natural origin chinook are caught," said David Troutt, natural resources director for the tribe.

In recent years, the tribe has implemented drastic changes to its fishing regime, including a decrease of 15 fishing days since 2004; reducing the number of nets that can be used by a fisherman from three to two; and having just less than a month of mark-selective fishing with tangle nets and beach seines.

This year's fishing plan will continue implementing mark-selective fishing, but only with beach seines.

"A historically large run of pink salmon is forecast to come in alongside chinook and coho this year," Troutt said. Tangle

nets – which ensnare fish by their teeth – would catch an unusually high number of pinks, which tribal fishermen aren't targeting.

"Since 2004, Nisqually tribal fishermen have already cut hundreds of hours off their chinook season," Troutt said. "Tribal fishermen are bearing the brunt of conservation for these fish so we can help them recover."

In a mark-selective fishery, fishermen release natural origin fish that haven't had their adipose fin removed in a hatchery. The adipose fin is a soft, fleshy fin found on the back behind the dorsal fin. Its removal does not affect the salmon.

"Mark-selective fisheries are a useful tool and the Nisqually is a unique place in western Washington where it could benefit salmon and tribal fisheries," Troutt said.

– E. O'Connell

Lummi Nation harvests hatchery fish, releases natural origin chinook

The Lummi Nation Natural Resources Department is conducting a pilot tangle net fishery for hatchery chinook salmon that allows natural origin fish to be released without harm.

Nooksack River early chinook are part of a major population group that must be recovering before the Puget Sound chinook listed as "threatened" under the Endangered Species Act (ESA) can be delisted.

Fish from the state Department of Fish and Wildlife's

North Fork Nooksack early chinook hatchery program are marked with a clipped adipose fin and/or coded-wire tag.

The Lummi Nation contracted with tribal fishermen Rab Washington and Johnny Olsen to fish with a small mesh tangle net. Natural resources staff sorted the fish, took tissue and scale samples from natural origin fish before releasing them, and took scale samples and coded-wire tag information from the retained hatchery salmon.

"We hope this pilot program will lead to a closely supervised tribal fishery so we can get back to the days our elder fishers reminisce about," said Merle Jefferson, director of Lummi Natural Resources. "Eventually, we could use the tangle net to harvest pink salmon that haven't been available to tribal fishermen because of chinook bycatch concerns. This will also increase fishing opportunities during the spring and summer months, and help protect the fall chinook fishery

from bycatch concerns."

The decline in salmon runs has come at a great cost to Lummi fishermen, who make up one of the largest tribal fishing fleets in the country. Increasing fishing opportunities is crucial to supporting their *Schelangen*, or way of life, and retaining their tribal identity.

"We need to get our kids out fishing so they can understand the way it used to be and why we do what we do," said Randy Kinley, fisherman and Lummi policy representative.

– K. Neumeyer



Upper Skagit Tribe tests smaller mesh net to tag steelhead, study population

The Upper Skagit Tribe is exploring the possibility of using a tangle net to learn more about Skagit River steelhead.

Last year, the tribe collected steelhead scales to determine the age and life history of 75 steelhead harvested over a two-week period during its ceremonial and subsistence fishery. But from a scientific standpoint, researchers need more than 75 samples and a longer sample period to learn

about the steelhead run.

This year, tribal natural resources staff investigated whether a tangle net could enable them to sample a greater number of fish without increasing the impact to the run.

“Tangle nets have been demonstrated to allow steelhead to be released with limited mortality,” said Bob McClure, fisheries biologist for the Upper Skagit Tribe.

“The purpose of this year’s

exploratory fishery is to collect additional biological and abundance data for management purposes,” McClure said. “If the tangle net fishery is successful, we could eventually use this method to gather data about winter steelhead outside of the traditional commercial fishery.”

In addition to taking scale samples, tribal natural resources staff measured and marked each steelhead with a small

reflective orange tag behind its right eye. The tag will provide additional information if the fish is recaptured or harvested later, allowing for long-term identification beyond the duration of the test fishery. During future fisheries, fishermen who harvest steelhead tagged with fluorescent orange Visual Implant tags are asked to contact McClure at 360-854-7058 with the tag and catch information.

– K. Neumeyer



Above, Upper Skagit natural resources technician R.J. Schuyler prepares a Skagit River steelhead to be tagged and sampled before it is released. Left, Lummi Natural Resources staffers Tony George, left, and Ralph Phair collect a hatchery chinook salmon from a tangle net in the Nooksack River.

Makah Cooperative Benefits Fishermen, Product

Catching fish is half the economic equation of the fishing industry; selling them is the other half. For many Makah fishermen, banding together into a co-op run by and for the fishermen is the best way to sell their catch.

The Cape Flattery Fishermen's Cooperative benefits fishermen in several ways. Gear can be purchased in advance of the season with payments made from their catch throughout the season. Additionally, co-op facilities can be improved continually to preserve fish for sale.

Though fishermen are not required to sell to a particular buyer, nearly 30 Makah boats sell mostly to the co-op.

General manager Dave Brown has been in the fishing industry for 50 years, and this marks his fourth year as manager of the Cape Flattery Co-op.

"We're really starting to make some progress with the equipment and ice machines that make it possible to have the best product for sale," Brown said. "The fishermen have really worked to care well for their catch and that allows us to market to high-end

restaurant buyers."

This year, the co-op added a state-of-the-art cooler room. It allows fish to be held longer, retaining the quality the fishermen have worked hard to maintain. A new ice machine provides flake ice instead of block ice to pack fish for transportation.

"There is more surface area of the fish next to the flake ice because of its shape," Brown said.

Makah tribal member Roland Gagnon has fished for more than 25 years and said the new cooler will improve marketing opportunities.

"If you want to sell to Safeway or Albertsons or Costco, you have to meet minimum criteria and one of those is definitely having temperature control of your product," Gagnon said.

He added that he and other fishermen would like to see an open market where buyers bid on the product. "It would make it more competitive and in theory improve the price for fish."

— D. Preston



Cape Flattery Co-op employee Charles Williams prepares to put halibut on ice before shipping.

D. Preston



K. Neumeyer

Dave Pflug, Seattle City Light fisheries biologist, steers a boat past a steelhead redd in the Skagit River.

Tribes, Utility Protect Salmon Eggs

A rainy April and a hotter-than-normal week in May created a challenge for the steelhead fry expected to emerge in August.

The rain, combined with heavy snowmelt after a string of 80-degree days in May, built up in the reservoir of Seattle City Light's Skagit River Hydroelectric Project. To prevent an overflow that could scour out steelhead redds (nests), the utility released more water than usual, increasing the flow of the Skagit River. As a result, spawning steelhead dug redds in places at risk of being dewatered before the last fry emerge this summer, when flows are lower.

Water management in the Skagit River is guided in part by spawning surveys conducted by biologists Stan Walsh of the Skagit River System Cooperative and Dave Pflug of Seattle City Light. The Skagit River System Cooperative is the natural resources extension of the Swinomish and

Sauk-Suiattle tribes.

Based on data gathered by Walsh and Pflug, Seattle City Light will release enough water in August to keep vulnerable steelhead eggs under water.

Walsh and Pflug have monitored salmon and steelhead redds between Rockport and Newhalem on the Upper Skagit River since 1995. They document new redds, note the condition of existing redds, and measure the depth of the shallowest redds to make sure the river's flow stays high enough for those eggs to survive, but not so high that the eggs are washed away.

They also share data with state fisheries co-managers to help forecast run sizes.

"Seattle City Light has been a great partner to the tribes in water management," Walsh said. "They've gone out of their way to protect fish beyond what's required in their license agreement." — K. Neumeyer

Grays Harbor Eulachon Focus of Study

Eulachon, or candlefish, have always been an important part of Quinault Indian Nation (QIN) life. So it makes sense that QIN biologists and technicians are tracking the populations of the oily fish in the Chehalis River as part of the federal government's assessment for the species that is listed as "threatened" on the Endangered Species list.

Eulachon are small fish, up to 8 1/2 inches long, that spend three to five years in the ocean before returning to spawn in fresh water. Traditionally, when dried and equipped with a wick, adult eulachon, with up to 15 percent body fat, were used as candles, yielding their nickname.

As part of environmental monitoring required by the National Oceanic and Atmospheric Administration, the U.S. Army Corps of Engineers was required to gather more information about eulachon populations in Grays Harbor. The corps contracted with QIN to conduct the eulachon monitoring program for the next two years, and possibly longer, said Larry Gilbertson, QIN senior scientist.



Alan Sarich, fisheries biologist for Quinault Indian Nation, hauls in a seine on the Chehalis River while monitoring eulachon.

D. Preston

The nation is familiar with the eulachon highs and lows in rivers like the Quinault River.

"Based on what we've observed on the Quinault River, five years would probably be a good amount of data

to see trends," Gilbertson said. "For now, we are contracted for two years. We do the sampling in the winter and early spring in the Chehalis River and we've finished one year."

— D. Preston

Quinault Investing in Blueback Recovery

To return the sockeye salmon, or blueback, run in the Quinault River to its historical levels, the Quinault Indian Nation (QIN) has already invested more than \$5 million toward an ambitious restoration effort to restore critical spawning and rearing habitat for the salmon.

More than 55 miles of spawning habitat in the river has dwindled over decades to fewer than 3 miles. For 2014, the nation has requested \$5.8 million from the state and federal governments to continue the work that has involved local residents, counties, and state and federal agencies.

The Quinault River watershed is renowned for the blueback it produces. The fish are culturally and economically vital to the nation. Adult sockeye spawn in the tributaries and side channels of the upper Quinault River and their young rear in Lake Quinault for one or two years before migrating to the ocean.

QIN has completed a science-based restoration plan designed to halt habitat degradation and create conditions for improvement. The plan relies on the use of engineered logjams to stabilize reaches of the river and advanced silviculture methods to return mature forests to the floodplain.

Work being done on the Upper Quinault River is a powerful



Crews completed a portion of the work on the upper Quinault River restoration project last year.

D. Preston

example of environmental stewardship benefiting the economy, and the state legislature needs to step up to support it, said Fawn Sharp, president of the QIN.

"There is interconnection between a healthy environment and a sustainable economy wherever you go, but on the upper Quinault, everything is lined up to truly make a difference," she said.

— D. Preston

Burlap Donated to Protect Young Trees

The Nisqually Indian Tribe is taking a creative approach to help a new streamside forest thrive.

“We’re using thousands of donated burlap sacks and transporting them across the Nisqually River by boat to make sure thousands of newly planted trees don’t get overrun by grass,” said David Troutt, the tribe’s natural resources director. The tribe’s restoration planting crew recently reforested 15 acres of off-channel habitat owned by the Nisqually Land Trust.

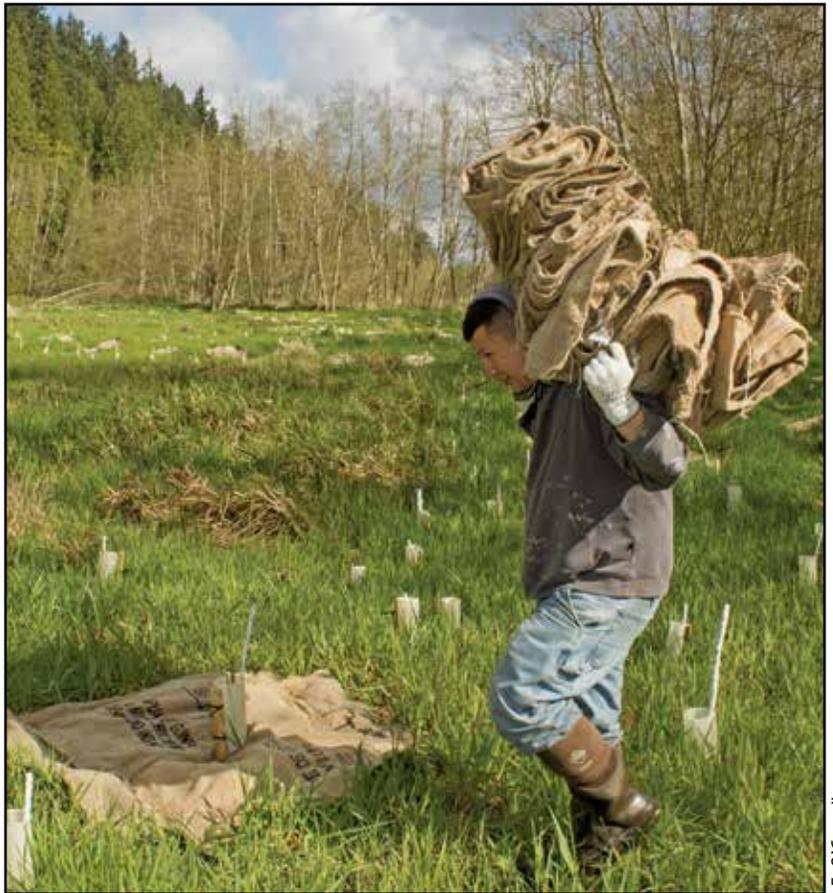
“Usually, we’d drive in with weed whackers and selectively use some herbicide to make sure the grass doesn’t take over,” Troutt said. “But this parcel is wet and remote, which means we had to take extreme measures.”

Much of the land trust property on the mainstem Nisqually is covered with water, so the tribe decided against traditional herbicide, which might have spread downriver. Placing burlap sacks around the young trees prevents grass from crowding them out.

Green Mountain Coffee Roasters in Sumner donated five pallets of used burlap sacks for the project.

After the initial work, the crew will return by boat every few weeks to weed the plants that couldn’t be covered because they were too close to water.

“We’ll have to maintain some plantings by hand because we’d probably see burlap sacks floating down the river if we tried to keep the grass down that way,” Troutt said. – *E. O’Connell*



Kyle Kautz, a member of the Nisqually Tribe’s planting crew, carries a pile of burlap sacks through a planting site on the Nisqually River.

E. O’Connell

Gravel Quality Important to Salmon Habitat

The Muckleshoot Indian Tribe is taking a close look at gravel in the Green River to see if the quality of incubation habitat is suitable for naturally spawning chinook and other salmon.

“In recent years, we have seen fewer naturally produced chinook leave the Green River,” said Martin Fox, habitat biologist for the Muckleshoot Tribe. “One possibility for the decline might have something to do with low quality gravel throughout the river.”

Chinook and other salmon build nests – or redds – in gravel, and when their eggs hatch, the baby fish can live in the gravel for weeks before emerging.

“Too much fine sediment, like from a landslide, can hurt salmon runs even before they have a chance to leave for the ocean,” Fox said.

On average during the past decade, fewer than 5 percent of chinook eggs deposited in the Green River survived to the fry or smolt stage, compared to more than 10 percent in the nearby Cedar and Skagit rivers.



Derek Booth, left, consulting geomorphologist, and Martin Fox, habitat biologist for the Muckleshoot Tribe, sample gravel to determine if habitat quality is declining in the Green River.

E. O’Connell

“We know that many factors could be responsible for the reduced chinook survival in recent years – from habitat quality to frequent floods that scour out spawning beds,” Fox said. “Another might be redd disturbance or competition in salt water

with the huge numbers of pink salmon returning to the Green River since 2003. But if salmon lack good quality gravel habitat to spawn and rear in, they can’t be successful.” – *E. O’Connell*



T. Royal

Tribal biologist Randy Johnson measures fish found in the estuary at Washington Harbor. The Jamestown S’Klallam Tribe is restoring Washington Harbor, adjacent to the entrance of Sequim Bay. A 600-foot-long causeway will be removed and replaced with a bridge.

Bridge to Restore Access to Estuary

The Jamestown S’Klallam Tribe is restoring salmon habitat in the 118-acre Washington Harbor by replacing a roadway and two culverts with a 600-foot-long bridge.

The road and the two undersized culverts restrict tidal flow to a 37-acre estuary within the harbor adjacent to Sequim Bay, blocking fish access and harming salmon habitat.

The tribe seined the harbor in April to take stock of fish populations before construction this summer. Chum, chinook and pink salmon, as well as coastal cutthroat, all use the estuary. Young salmon come from a number of streams, in-

cluding nearby Jimmycomelately Creek at the head of Sequim Bay.

Historically, the area had quality tidal marsh and eelgrass habitat until the roadway and culverts were installed about 50 years ago, said Randy Johnson, Jamestown S’Klallam Tribe habitat program manager.

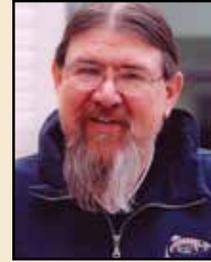
“The roadway and culverts appear to have severely degraded this habitat, with evidence showing that the estuary has been deprived of sediment and is eroding,” he said. “The structures restrict access for fish and prevent high-quality habitat from developing.”

– T. Royal

NWIFC Board Re-Elected



At the Northwest Indian Fisheries Commission Board of Officers annual election in May, NWIFC Chairman Billy Frank Jr. was re-elected to another three-year term as chairman of the board. Frank is a Nisqually tribal member. The board also re-elected Swinomish fisheries manager Lorraine Loomis as vice chair and Quinault Indian Nation policy representative Ed Johnstone as treasurer.



Big Catch, Small Fry



T. Royal

Matthew Chapman, Jamestown S’Klallam, helps his dad Josh Chapman unload their halibut catch near Sequim Bay.

Weaving Traditions

“If you aren’t in the mood, don’t weave. It shows up in the work.” That’s one of the many things Quileute tribal member Cathy Salazar has learned after 16 years of basket weaving.

“The weave will get too tight or sloppy if you aren’t in the right frame of mind,” she said.

Despite years of weaving, Salazar didn’t fully appreciate the traditional ways of preparing materials for some time because others provided the cedar and grasses ready to use in baskets.

“It was all ready to go and Grandma Lillian Pullen or my other instructors would weave the basket bottoms for me to get the basket started,” Salazar said. Pullen was her first teacher and everyone called her “Grandma.”

However, there came a time when the raw materials weren’t as easily available, so Salazar went out with a group of tribal members to strip cedar bark and learned about the hard work required to prepare the bark for weaving.

“When people look at a basket and grumble about the price, they usually don’t understand that the weaving is the fastest part for accomplished basket-makers,” Salazar said. “The preparation takes the most time.”

Once the cedar bark is stripped from the tree, the outer bark must be separated from the inner bark. Then it is dried indoors to prevent mold. It is either stored or soaked in water if it will be used in the near future.

Salazar chuckles that her sister Anne Walker, who lives in Arizona, can have cedar harvested in May ready to use by July because of Arizona’s hot and dry climate. In the rainforest, “I’m probably not able to use it until November,” she said.

Properly preserved, the weaving materials can be stored for many years.

“Some weavers have cedar that was their grandmother’s that they use in baskets,” Salazar said. “When folks are looking at baskets, they always comment they can smell the cedar when they are holding those old-growth baskets. The color is darker, too.”

Quileute Natural Resources now organizes cedar bark gathering each year as part of a cooperative agreement with the timber company Rayonier. Natural resources employees mark the way to the grove and provide transportation if necessary. Cedar is collected and distributed to those who aren’t able to gather it them-



D. Preston

Cathy Salazar, Quileute, works on the bottom of a basket with another uncompleted basket in the foreground.

selves.

“I think we had the most requests that I can remember for materials this year,” Salazar said.

Salazar knows the value of the materials and gives prepared cedar to relatives and friends as presents for birthdays and other holidays.

“They appreciate it because they know how much work it takes to get it ready. For me, I would trade it ounce for ounce for gold.”

—D. Preston



D. Preston

Whale Surf

Quileute tribal members Bradley Hatch and Jonathan Boyer enter the surf in LaPush to offer chinook to the whales during the Welcoming of the Whales ceremony.

Courtesy of the Hoh Tribe



Generations

In this undated photo, Hoh tribal members pose with members of a sailing ship.

Ships from all over the world, including Russia and China, traveled the coast. Sailors either visited to trade or were sometimes taken as slaves by tribes.

Deadly Fish Virus No Threat to Pacific Salmon

Recent tests of salmon from Washington's waters show no signs of a fish virus that can be deadly to farm-raised Atlantic salmon.

Infectious Salmon Anemia Virus (ISAV) was not detected in tissue samples taken from more than 900 wild and hatchery-produced Pacific chinook, coho, sockeye, chum and steelhead, as well as farm-raised Atlantic salmon.

ISAV is not harmful to people.

Specific strains of the virus have caused a deadly disease in farm-raised Atlantic salmon. Outbreaks with significant losses have occurred in farmed Atlantic salmon in Maine, Eastern Canada, Chile and several European countries.

ISAV has not been documented in farmed, wild or hatchery salmon in Washington.

John Kerwin, fish health program manager for the Washington Department of Fish and Wildlife (WDFW), said concerns about the possibility of the virus occurring in Washington's salmon prompted the recent tests, which are part of a two-year monitoring program specifically designed to detect ISAV.

"Our traditional testing protocols would have detected most – but not all – of the disease-causing strains of ISAV virus," Kerwin said. "So we expanded our program to better detect whether any strain is present in a variety of fish species in Washington. The good news is all the samples

came back negative for the virus."

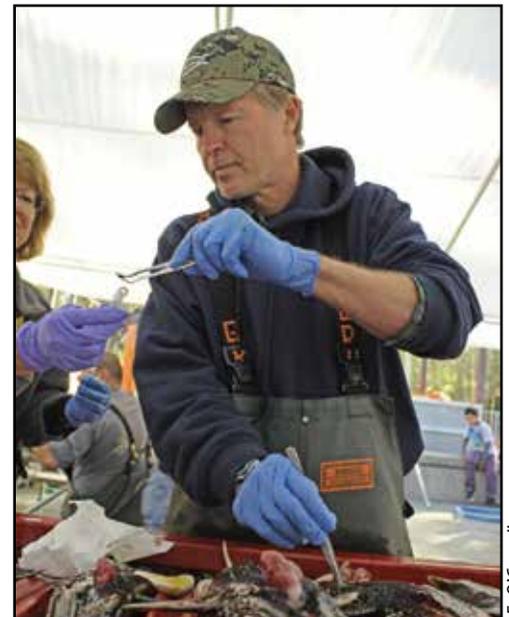
Elsewhere on the west coast, there have been no confirmed reports of ISAV in wild, hatchery or farmed salmon. In 2011, a Canadian researcher reported detecting the virus in some British Columbia Pacific salmon. However, the Canadian Food Inspection Agency, the federal agency with authority for fish health in Canada, tested fish tissue samples and found no ISAV present.

Bruce Stewart, fish health program manager for the Northwest Indian Fisheries Commission, said the sampling and monitoring program is a great example of tribal, state and federal managers working together to address concerns about the health of salmon and steelhead stocks in Washington.

"While this first year's results are encouraging, we hope to increase our level of confidence that the virus is not present in Washington by continuing our efforts and including testing of pink salmon," Stewart said, noting that most pink salmon return to Washington's waters only in odd-numbered years.

Andy Goodwin, fish health program manager for Region 1 of the U.S. Fish and Wildlife Service, said the ISAV surveillance program is an important addition to an already comprehensive fish health monitoring effort by the agencies.

"Protecting the health of Pacific salmon populations is a high priority



E. O'Connell

NWIFC fish health program manager Bruce Stewart samples salmon for viruses.

for us," Goodwin said. "This ISAV surveillance collaboration has really complemented the regular testing that we do on many thousands of fish every year."

The tissue samples taken for the ISAV monitoring program were analyzed at the Washington Animal Disease Diagnostic Laboratory in Pullman and at a U.S. Fish and Wildlife Service laboratory in Idaho.

More information on the species and stock of salmon sampled is available on WDFW's website at go.nwifc.org/isavwdfw. – T. Meyer

Walking On

Hank Gobin, *Kwi tlum kadim*



Tulalip leader and director of the Hibulb Cultural Center, Henry “Hank” Delano Gobin, *Kwi tlum kadim*, passed away April 25.

Gobin was born May 29, 1941 in Tulalip.

Gobin served as the tribes’ cultural resources manager for 24 years, and developed Tulalip’s language program. He helped set the cultural foundation, protocols and values surrounding the tribal family canoe journey. He also worked closely with tribal, federal, state and local governments and agencies on issues of cultural and environmental interest and established standards that met the needs and concerns of the Tulalip Tribes.

Throughout his career, Gobin dedicated much of his work toward building a tribal museum. He advised, initiated and designed what became the Hibulb Cultural Center and Natural History Preserve.

He is survived by his wife, Inez Bill-Gobin; two sisters, Anna Mae Hatch (Verle, deceased) and Isabelle Legg (James, deceased); a brother, Earl “Moxie” Renecker (Bernice, deceased); and three sons, Rick, Brian, and Bill Coriz, all of Sante Fe, N.M. He is preceded in death by his parents, Henry and Isabelle Gobin; and siblings, Shirley, Emery, Daryl, Frank and John.

Albert Bruce Hillaire



Albert Bruce Hillaire, a Lummi Nation fisherman and diver, passed away May 9.

He was born March 1, 1966 to Richard Hillaire II and Phyllis Miller. He joined the U.S.

Army after high school, serving three tours including Operation Desert Shield. When he returned to Lummi, he proudly followed his ancestors in harvesting the open sea.

Hillaire is survived by his children Justin, Taylor, Mikko and Kiera; stepchildren Krista Kern, Devin Bynum and Bryce Bynum; sisters Valdeen Lambert and Doreen Vargas; brothers Richard III, Elden and Rodney; and numerous nieces and nephews.

He was preceded in death by his parents; brothers Matthew, Kellee, Delton and Andrew; and stepson Michael.

Fran James, *Che top ie*



Lummi Nation elder Frances Gladys (Lane) James, *Che top ie*, passed away April 28 in Bellingham.

Fran James was born May 20, 1924 on Portage Island.

James shared her life and knowledge with everyone, and taught all who wanted to learn. A few of her favorite sayings were “Weaving together the fabric of our lives,” and “Just make it.”

She is survived by her son, Lummi Nation Hereditary Chief Bill James, *Tsi li xw*; sisters Ernestine Gensaw, Rena Ballew and Beverly (Jack) Cagey; brother Glen Lane, and numerous nieces and nephews.

She is culturally survived by many sons, daughters, nieces, nephews, grandchildren and great-grandchildren.