



Northwest Indian Fisheries Commission

NWIFC News

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Tribes Reject Higher Cancer Rate

By Lorraine Loomis
NWIFC Chair



Gov. Jay Inslee wants to change the cancer risk rate used to set state water quality standards from one in one million to one in 100,000. That is unacceptable to the treaty Indian tribes in western Washington. We refuse to accept this tenfold increase in the risk of getting cancer from known cancer-causing toxins, and you should, too.

The cancer risk rate, along with the fish consumption rate, is a key factor in determining how clean our waters must be to protect our health. The more fish we eat, the cleaner the waters must be.

Water quality standards are supposed to protect those who need protection the most: children, women of childbearing age, Indians, Asian and Pacific Islanders, sport fishermen, and anyone else who eats local fish and shellfish. When the most vulnerable among us is protected, so is everyone else.

The federal Clean Water Act requires that states develop water quality standards to ensure our waters are clean enough to provide healthy fish that are safe for us to eat. But the state has been operating under outdated and inadequate water quality standards developed more than 20 years ago, and has missed every deadline since then for updating the standards as required by federal law. The state admits that its current water quality standards don't adequately protect any of us.

Under his plan, Inslee would correctly increase the fish consumption rate from a ridiculously low 6.5 grams per day (about one bite) to 175 grams per day, the same protective rate as Oregon's. But he would effectively cancel out that improvement by decreasing our protection under the cancer risk rate.

Further complicating matters, Inslee ties development of the new state water quality standards to a \$12 million statewide toxics reduction program that will require legislative approval. That is unlikely given the \$2 billion state budget shortfall.

Inslee's proposal would require the Legislature to grant the Department of Ecology more authority to regulate toxic chemicals. That is also highly unlikely given the Legislature's historic reluctance to grant Ecology more power to control chemicals in our environment.

At its core, Inslee's plan does more to preserve the status quo than result in any real improvement to our water quality standards. It is a political solution to a human health issue. The concept of a larger toxics reduction program to tackle pollutants at the source is a good one, but it is not an acceptable substitute for strong water quality rules. We should have both.

We know that Inslee and previous governors have struggled with updating the state's water quality rules for decades because of complaints by industry that new water quality rules could increase their cost of doing business. But an economy built on pollution cannot be sustained.

Fortunately, at the request of the tribes, the U.S. Environmental Protection Agency has said it will step in to develop new standards this year if the state is unable.

EPA Regional Administrator Dennis McLerran announced in December that the agency will keep a close eye on the progress – or lack of progress – of the state's effort to update our water quality standards. The agency has begun a rulemaking process parallel with the state effort now under way. If the state develops standards acceptable to EPA, the agency will pause and work with the state to finalize the new standards. If the state is unable, EPA will continue its process and adopt new standards for the state.

We appreciate EPA's willingness to protect the integrity of our state's environment and water-based resources that are central to human health and treaty rights. We hope the state will step up before EPA has to step in to make sure our water quality standards protect all of us.



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On the cover:
Quileute fisheries technician Jack
Davis records coho redds on Elk
Creek in the Quillayute River
watershed. Low snowpack has
fisheries managers concerned about
conditions for fish, particularly if
spring rains do not add to the water
table. See related story on page 5.
Photo: D. Preston

Tribes Honor Late NWIFC Chair Billy Frank Jr.



T. Meyer (2)

Squaxin Island tribal members Will Henderson, left, and Joseph Peters unveil the newly named street for Billy Frank Jr. on March 9, Billy's birthday. The day also will be recognized annually by several tribes in western Washington as Billy Frank Jr. Day.

The Lummi Nation, Lower Elwha Klallam, Nooksack, Stillaguamish and Squaxin Island tribal councils recently declared Billy Frank Jr.'s birthday – March 9 – a tribal holiday.

"We all miss Billy and what we need to do is continue his mission and remember what he wanted us to do," said Squaxin Island Chairman David Lopeman. "Setting aside a day of remembrance for our hero every year is one of the highest honors we can give."

The tribe further honored Frank by naming the street leading to its Cultural and Natural Resources building as Billy Frank Jr. Way.

At a reception following the street naming, Gov. Jay Inslee said Frank has been "one of the great treasures of the state of Washington to have had a voice for the salmon that was so courageous, and so warrior-like and so effective, and so resilient, and so committed.

"We are going to do everything that is humanly possible to make sure that voice continues to ring, not only in our ears, but in our hearts, and in our legislation and in our rules, and in our communities."

Billy Frank Jr. passed away May 5, 2014.

Frank helped lead a campaign for treaty fishing rights in the 1960s and 1970s. Treaty tribes reserved the right to fish, hunt and gather shellfish in treaties with the federal government in the 1850s. But when tribal members tried to exercise those rights, they were arrested for fishing in violation of state law.

Frank was arrested more than 50 times in defiance of state regulation of tribal fishing. A 1974 federal court decision in *U.S. v. Washington* (the Boldt decision) reaffirmed the 20 treaty Indian tribes in western Washington as co-managers of the salmon resource with the state. Frank was chairman of the Northwest Indian Fisheries Commission for more than 30 years.

"Billy's strength wasn't just in his tenacity during the Salmon Wars, but in his patience in finding peace with people who used to fight with him," said Jim Peters, Squaxin Island council member.

"Billy was an important leader, mentor and voice for all of our watersheds, protecting the salmon, habitat and cultural survival of our people," said Shawn Yanity, Stillaguamish Tribe chair and NWIFC vice chair. "We hon-

or his memory and dedication to keep the salmon coming home."

"It is appropriate and necessary that Billy and his great leadership be commemorated and honored for all time in the future," said Katherine Canete, general manager of the Nooksack Tribe. "We will remember and celebrate his legacy, along with many other tribal nations."

Lower Elwha Klallam tribal vice chairman Russ Hepfer approached his council after hearing about Squaxin Island's resolution.

"The tribe is hopeful other tribes and the state will take notice of this movement and honor him similarly," said Frances Charles, Lower Elwha Klallam chairwoman.

"So hard to put to words what Billy is to all of us: a warrior, a leader and a soldier, for all Native people throughout our great lands," said Elden Hillaire, chairman of the Lummi Fisheries Commission. "Billy taught us so much that all of us can carry on his work."

The day is considered a tribal government holiday, so those tribal offices will close annually on March 9. – T. Meyer, E. O'Connell, K. Neumeyer and T. Royal

Ancient Petroglyph Returned, Preserved in LaPush

If not for the keen eyes of a fisherman, an ancient Quileute cultural marvel might have gone undiscovered for many more years.

Erik Wasankari, originally of Forks, was fishing on the Calawah River in 2013 when he noticed some unusual markings on a rock. He rubbed off moss to uncover what he believed to be a petroglyph. So he contacted the Quileute Tribe who then contacted state archaeologists.

Lee Stilson, state lands archaeologist, now retired, and state Department of Natural Resources archaeologist Maurice Major, inspected the rock and were awed by its complexity and workmanship.

"We can't definitively date it yet, but it seems to clearly pre-date white contact with the Quileute people," said Stilson, who considers the work to be in the top three discoveries in his career.

The 800-pound rock, with a diameter of about 4 feet, tells the story of a red lizard who had a lair on a walking path between the Sol Duc and Calawah Rivers, and prevented people from using it. *K'wati*, the trickster, killed the red salamander, as he had killed other monsters in other stories. The petroglyph depicts *K'wati* killing the lizard, incorporating naturally occurring red rock into *K'wati*'s tongue.

The petroglyph was found just downstream from where an old land map showed the path that the



D. Preston (2)

Above: Recently retired state Department of Natural Resources archaeologist Lee Stilson, right, shows Quileute tribal member Eugene Jackson the petroglyph on the 800-pound rock from the Calawah River. Below: Quileute tribal members perform a cleansing ceremony as part of welcoming the petroglyph home.

Quileute people walked between the two rivers.

"It's slap-your-face amazing," Stilson said. "This is a museum-quality piece of work, and muscular – it would have taken a great deal of effort to create this in the metamorphic rock with the tools of the time."

"In Hawaii, they always said you could start out every day looking really hard for an artifact, but it won't be revealed to you until it's the right time," Major said. "This petroglyph

was there all along, but now was just the right time to really see it."

The Quileute tribal council decided to move the rock to LaPush rather than risk having it defaced or lost to flood waters over time. It was officially returned this winter after the location was kept secret for the better part of a year while plans were made to move the heavy and unwieldy stone from its riverside location.

The tribe has the rock secured in LaPush and is consulting with elders to decide how it will be preserved and whether public viewing will be permitted. The petroglyph was blessed during a celebration when it was brought to LaPush and the Wasankari family was given gifts for finding it.

"This is living history," said Cathy Salazar, tribal council member. "It resonates with us, it's who we are, and it gives us a sense of pride."

– D. Preston



Low Snowpack Concerns Biologists

Brown instead of white. That was the state of the Olympic Mountains this winter with average temperatures 5 to 7 degrees higher than usual, according to the National Weather Service.

For this mountain range, home to some of the lowest elevation glaciers in North America, it's the difference between snow and rain.

With mountains and valleys of the Olympic Mountains largely devoid of the snowpack that helps delay low river flows of summer, tribal fish biologists and fisheries managers are concerned.

"Snowpack helps retain groundwater," said Joe Gilbertson, fisheries manager and biologist for the Hoh Tribe.

"We had historic low flows last summer and fall and now we're starting the year with little to no snowpack," he said. "Snowpack is particularly important higher in the watershed where groundwater helps feed tributary streams that are important to juvenile coho and steelhead rearing.

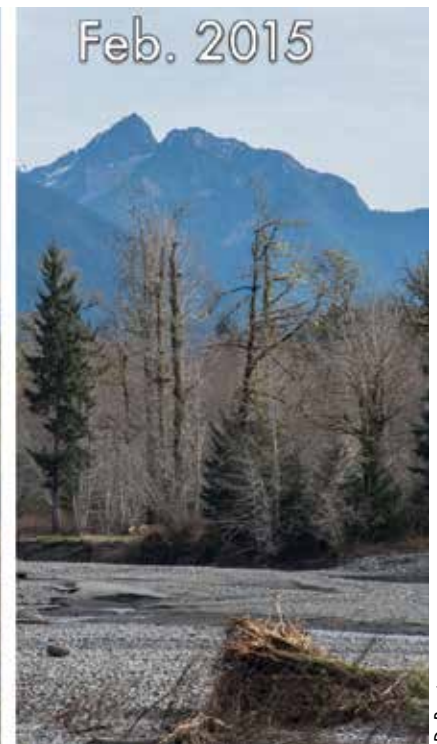
"As flows get lower in the summer, we start to have distribution problems, particularly with summer chinook. The fish aren't able to move up the river and get hung up in pools," Gilbertson said. "It changes where fish spawn and their distribution throughout the system. It also creates fishery management problems for non-tribal and tribal fisheries because of concentrated fishing efforts in a smaller area."

Temperatures in the rivers and tributaries are likely to get higher sooner.

"We already have a number of rivers and streams out here that exceed the



Views of the Valhalla Range in the Olympic Mountains show a stark difference of the snowpack in just over a year.



D. Preston

federal Environmental Protection Agency's standards for temperature and it's likely to be worse without the snow," Gilbertson said.

Tribal hatcheries also must begin to plan for lower flows and higher water temperatures.

"There are flow concerns at the Quinault Salmon River Hatchery," said Tyler Jurasin, fishery operations manager for the Quinault Indian Nation (QIN). "We have to start thinking about alternate rearing strategies for dealing with reduced water in case the rain doesn't come and make up for the reduced flows."

Without the influx of melting snow into Lake Quinault in June to raise the lake level, QIN's Lake Quinault Fish Hatchery staff will have difficulty bringing fish pens closer to shore to allow for tagging of chinook.

"We're discussing trying to fatten up the fish sooner to allow tagging earlier before the lake levels drop," Jurasin said. "Less water from snow melt means reduced spawning area as well as less desirable spawning areas that subject the eggs to the high flows of late fall, reducing survival."

While tribal fishery and hatchery managers are anticipating the changes that may occur with the reduced snowpack, Gov. Jay Inslee is pursuing legislative funds after declaring a drought for parts of the Olympic Peninsula and eastern Washington. He will ask the legislature for \$9 million to assist with mitigating drought affects. If the funds are not approved, the designation will still aid planning efforts for tribes and government entities working on fish mitigation plans. – D. Preston

"Less water from snow melt means reduced spawning area as well as less desirable spawning areas that subject the eggs to the high flows of late fall, reducing survival."

– Tyler Jurasin, Quinault Indian Nation fishery operations manager

Skagit Fishery Disappears

It was the end of an era for Upper Skagit tribal fishermen as the last full return of hatchery steelhead arrived in the Skagit River this winter.

Because of a lawsuit that the Washington Department of Fish and Wildlife (WDFW) settled last spring, this was the tribe's last full season fishing for hatchery steelhead, with returns reduced starting next year, and gone by 2017.

"Our ancestors gave up everything so that we could continue to fish in our traditional areas," said Scott Schuyler, the tribe's natural resources director. "Without hatchery production, we can't have a meaningful fishery."

The last full steelhead fishery is especially bittersweet for Schuyler, whose 14-year-old daughter just received her first tribal fishing card.

"Maybe she'll be able to have one day of fishing a year," he said. "That's not a meaningful fishery."

Steelhead are a culturally important species that the tribe harvests for commercial, ceremonial and subsistence purposes. Historically, steelhead were available during the long winter months when other species were not available to feed tribal families.

Hatchery programs have been a part of fisheries management in Washing-

ton for more than 100 years, making up for lost natural production as a result of degraded and destroyed habitat. Guided by science, hatchery management in western Washington is carefully managed to protect the genetic health of wild fish. In the Skagit River, hatchery programs also provide mitigation for the ongoing effects of hydroelectric plants.

Last spring, the Wild Fish Conservancy sued WDFW over hatchery winter steelhead programs that used Chambers Creek broodstock.

"Hatcheries are under attack," Schuyler said. "Taking away hatchery programs leaves tribes under certain circumstances with a severely diminished or no opportunity."

The Upper Skagit Tribe, along with the Lummi Nation and Tulalip and Stillaguamish tribes, released a statement at the time of the lawsuit saying that the Wild Fish Conservancy "erroneously concluded that hatchery production, rather than the loss of habitat, is responsible for the depressed state of the Puget Sound Steelhead populations."

However, WDFW settled the lawsuit, agreeing to halt the release of Chambers Creek hatchery steelhead in all Puget Sound rivers but one, until



K. Neumeyer

Upper Skagit tribal member Darryl Schuyler harvests a steelhead from the Skagit River during the tribe's winter fishery.

the National Oceanic and Atmospheric Administration approves each program. The settlement also put a 12-year moratorium of steelhead hatchery releases in the Skagit River.

– K. Neumeyer

Line 'em Up, Ready to Go



D. Preston

Quinalt Indian Nation (QIN) hatchery technician Shawn Johnstone lines up male steelhead during spawning operations at the QIN Lake Quinalt Hatchery near Amanda Park.

The hatchery steelhead are targeted by QIN fishermen and help other tribal members make a living guiding non-tribal fishermen on the Quinalt River.



E. O'Connell

Justin Paul, biologist with the Puyallup Tribe, counts rescued salmon during a dewatering of the White River.

Tribes Rescue Salmon

As the U.S. Army Corps of Engineers held back the flow of the White River, Russ Ladley carefully searched for young salmon stranded in small pools.

Unfortunately, most of the fish that the Puyallup Tribe of Indians' resource protection manager found didn't make it back to the river before the river's flow dropped by two-thirds.

The Corps slowed the flow from its Mud Mountain dam facility so repairs could take place safely at another downstream dam owned by the water utility Cascade Water Alliance.

These fish-outs – rescuing stranded fish when the water levels are lowered – are a regular part of management on the White River, because repairs are needed regularly at a diversion dam upstream.

Puyallup staff were joined along a 20-mile stretch of the White River by staff from the Muckleshoot Indian Tribe and representatives of local, state and federal agencies.

As the water levels dropped, most juvenile fish found their way back to the deeper water in the middle of the river. But some fish were stranded in side channels and isolated pools.

"We found a good amount of stranded fish – wild chinook, coho and steelhead that died in side channels and pools," Ladley said. "But we were able to save dozens of other fish that would have otherwise perished."

Currently the Corps is considering a proposal to replace the entire facility at Buckley.

"If they rebuilt that dam, there would be very little need to dewater the river in the future," Ladley said. As it is, dam replacement would be completed in late 2020. – *E. O'Connell*

New Incubator May Help Salmon Return to Lyle Creek

Sauk-Suiattle elders still talk about the old days of harvesting chum salmon from Lyle Creek.

With chum runs on the decline since 2007, and no fish in Lyle Creek, the Sauk-Suiattle Tribe is testing a method of enhancing the population using a remote site incubator.

Salmon runs across Puget Sound are in decline because of lost and degraded habitat. Remote site incubators enable fisheries co-managers to supplement natural production where spawning habitat is inadequate.

Adult fish collected in November from an unstable Sauk River side channel complex were spawned at the state's Marblemount Hatchery, where the eggs grew to the eyed stage. In January, 2,400 eyed eggs were placed in an incubator that draws water from a tributary adjacent to Lyle Creek.

"The remote site incubator allows the eggs to get acclimated to the water where they'll be released," said Jason Joseph, Sauk-Suiattle natural resources director. "When they get to a fry stage, we'll release them at the confluence of Lyle Creek and Hatchery Creek."

Lyle Creek and Hatchery Creek flow through the tribe's stewardship conservation area.

The remote site incubator consists of two barrels. The first separates sediment from the water and the second incubates the eggs. – *K. Neumeyer*



K. Neumeyer

Lucas Wilson, Sauk-Suiattle natural resources technician, left, and Steve Stout, hatchery specialist for Washington Department of Fish and Wildlife's Marblemount Hatchery, collect adult chum for the Sauk-Suiattle hatchery program.

Lummi Nation Upgrades Shellfish Hatchery



K. Neumeyer (2)

Above: The Lummi Shellfish Hatchery grows its own algae to feed millions of geoduck, manila and oyster seeds. Below: Shellfish hatchery manager Flavian Point describes the system where bags are placed inside cages to feed shellfish seeds overnight.



The Lummi Nation's shellfish hatchery is adding an all-night feeding system to its algae-growing operation.

For years, the hatchery has grown its own algae to feed manila clam, geoduck and oyster larvae. The new system being installed consists of 60 algae-filled bags in glowing shades of neon that pump directly into the raceways.

One of the hatchery's three geoduck systems consists of 11 raceways that hold about 6 million geoduck seeds, which can go through 30,000 liters of algae a day.

"The new algae bag system will operate 24-7," said Flavian Point, Lummi shellfish hatchery manager. "Overnight, it can produce an amount of algae that is equivalent to one of the hatchery's 15,000-liter algae tanks."

The geoduck operation has a total of 20 raceways when all three systems are on-line, having expanded from five raceways since 2010.

The expansion has provided new job opportunities. In addition to eight full-time staff, AmeriCorps provides five employees for 20 hours each week, and two tribal members have been hired through the Dislocated Fishers Program, which helps fishermen earn a living between fishing seasons.

The shellfish hatchery used to support itself through seed sales until the Lummi Nation took over operating costs in exchange for manila clam and oyster seed to enhance the reservation tidelands for tribal harvest. Only the geoduck seed is sold commercially.

Concerned about increasing water temperatures as a result of climate change, some of the geoduck seed customers, including the Squaxin Island Tribe, have started seeding their beds earlier, which required the hatchery to spawn geoducks a month earlier.

"The goal is to get the seed planted before the water temperatures get too warm," Point said. "The seed is looking good and the larvae are on schedule to be ready in April." – K. Neumeyer

"Overnight, it can produce an amount of algae that is equivalent to one of the hatchery's 15,000-liter algae tanks."

– Flavian Point, Lummi Nation, shellfish hatchery manager



WDFW biologist Andrea Carey processes mussels at the state Natural Resources Building in Olympia.

Mussels Expected to Reveal Contaminants in Port Gamble Bay

A small mussel can help provide the big picture of water pollution.

The Port Gamble S'Klallam Tribe and the Washington Department of Fish and Wildlife (WDFW) are placing cages filled with mussels around Port Gamble Bay, then testing the mussels for various chemicals, such as dioxins and metals.

"We're concerned about the pollutants from the former log mill site being transported to the reservation and beaches around the bay," said Rory O'Rourke, the tribe's environmental scientist.

Mussels are filter-feeders that also consume plankton and any chemical pollutants attached to the plankton. They retain those contaminants for two to four months. Mussels are used around the world as indicators of water quality near industrial worksites, in areas with creosote pilings, and after major oil spills.

"Contaminant patterns in mussels can help reveal sources of contamination," said WDFW biologist Jennifer Lanksbury. "We had great success using transplanted mussels on a large scale during a pilot study in 2012 and 2013 to characterize patterns of near-shore contamination in Puget Sound."

In the first round of mussel monitoring in Port Gamble Bay, mussels were exposed from December 2014 to February 2015. The next batch of mussels will be exposed in 2017-2018; they are intended to monitor contaminants in the bay during and after the Port Gamble Bay cleanup.

The cleanup is part of an extensive state-mandated process, funded and directed by the Department of Ecology. The work includes removing creosote-laden pilings and dredging sediments, which could release pollutants when removed. – T. Royal

Skokomish, Agencies Partner to Clean Hood Canal Waters



Seth Book, Skokomish Tribe water quality biologist, uses a refractometer to measure the salinity of a water sample from Hood Canal.

The Skokomish Tribe wants more shellfish harvesting areas opened for everyone in Hood Canal and is working with local agencies to make that happen.

"There are areas near Hoodsport that we want to see open for harvest because the resource is plentiful," said Seth Book, the tribe's water quality biologist.

It's a multi-agency and multi-year effort between the tribe, Mason County Health Department, the state Department of Health, Hood Canal Coordinating Council and Washington State University (WSU) to classify a 1-mile stretch of beach near Hoodsport as safe for harvest.

Hood Canal has been plagued for years by water pollution from leaking septic systems and low dissolved oxygen issues.

"We'd like to address potential pollution issues to improve conditions for shellfish," said Chris Eardley, the tribe's shellfish management biologist. "Working with these partners will help us all achieve the same goal – cleaning the water in Hood Canal and improving natural resources for all."

The tribe and the county and state health departments are collecting and analyzing water samples from the area during a three-year period, starting in fall 2014, which is a regulatory requirement for an area to be considered as safe for harvest. Once the area is opened, the tribe will seed it so more of the resource is available.

In addition, WSU will be conducting surveys of landowners to better understand how to work with them to address water quality problems.

The state health department also is conducting a survey of all the potential sources of pollution in the area, Book said, and the tribe will continue its pollution monitoring and control work into the future. – T. Royal

Herring Decline in Port Gamble Bay



WDFW
Jennifer Lanksbury, left, and Laurie Niewolny, right, WDFW biologists, prepare a herring cage to be deployed in Port Gamble Bay.

Until the early 21st century, Port Gamble Bay was home to one of the largest herring populations in Puget Sound.

From 1978 to 1995, an average of 2,205 tons of herring spawned annually. In 2003, there were 1,064 tons of herring in Port Gamble Bay, but by 2013 that number had decreased to 273 tons.

Conversely, the herring population in nearby Quilcene Bay has increased from 916 tons in 2003 to 2,072 tons in 2013.

It is not known whether contaminants in Port Gamble Bay are responsible for the decrease in herring population, if the population is moving to Quilcene Bay, or if a combination of both is affecting the population in Port Gamble Bay.

Washington State Department of Ecology is funding two studies to figure out which factors are responsible for the dramatic decrease in the Port Gamble Bay population. The tribe and Washington Department of Fish and Wildlife (WDFW) are

conducting most of the work.

“By collecting samples and counting herring, we want to determine if the bay and canal populations are the same fish or not, and determine what contaminants the fish are taking in,” said Hans Daubenberger, the tribe’s fisheries biologist.

However, herring embryos are hard to study because spawning takes place during the darkness of winter and eggs are a food source for predators.

To collect samples, WDFW and the tribe captured ripe adult herring, spawned them and allowed the fertilized eggs to adhere to plastic strips. The egg-covered strips were placed in protective cages that were placed throughout Port Gamble Bay from December 2013 to February 2014.

Scientists also deployed plastic membranes to see if they absorb contaminants. If effective, this tool could be an alternative to using herring embryos to monitor pollutants.

– T. Royal

Candlefish Return to Elwha River

While the Lower Elwha Klallam Tribe keeps a close eye on the resurgence of marine life in the newly restored Elwha River, the biggest surprise of the winter was the return of the candlefish.

“The Elwha had a native stock of the candlefish but, like salmon, they were negatively impacted by the dam construction in the 1920s,” said Mike McHenry, the tribe’s habitat program manager.

Also known as eulachon or ooligan, candlefish have been seen during the tribe’s smolt trap surveys recently.

“Each spring since 2005 we’ve seen a few eulachon in the Elwha River estuaries, but it’s been usually less than two dozen,” McHenry said. “In 2012, we started to see the resurgence, with a couple hundred showing up.”

A food source for adult salmon and other predators, candlefish also provided rich fat content historically for tribes. The nutritious “fish butter” was used on foods such as salmon, halibut, herring roe, berries

and vegetables.

Northwest eulachon populations have declined severely in the past 50 years. In the Columbia River, the fish were listed as threatened under the federal Endangered Species Act in 2014. In Canada, they are listed as endangered under the country’s Committee on the Status of Endangered Wildlife.

Overall, the species continues to suffer a decline in numbers due to dredging, shrimp trawl bycatch mortality, habitat loss and agricultural pollution. But in the Elwha, they seem to be thriving.

“When we’re down at the estuaries sampling, we’re seeing a ton of animals taking advantage of the new marine life,” said Kim Williams, tribal habitat restoration technician. “As many as 53 eagles have been counted at one time standing on the sandbar at the mouth and are frequently seen wading in the shallow river riffles to catch a fish.” – T. Royal



Lower Elwha Klallam Tribe

Lower Elwha Klallam natural resource technician Sonny Sampson catches an adult eulachon from the Elwha River estuary.

SQUAXIN ISLAND TRIBE

Industry and Salmon Restoration Co-Exist in Shelton Harbor Project

A massive salmon habitat restoration project in Shelton Harbor could turn back the clock on the area's industrial center.

The Squaxin Island Tribe is working with Simpson Lumber Co., the Port of Shelton and others to restore 25 acres of salmon habitat at the mouth of Goldsborough Creek as it flows into Shelton Harbor. The tribe recently applied for a grant to kick-start the project.

Shelton Harbor has been the center of Mason County's logging-based economy for more than a century. Simpson first started milling logs on the site in the 1920s, expanding their footprint several times over the decades.

While restoring salmon habitat along the shorelines of the Shelton industrial waterway, the restoration project would not impact any commercial activity there.

"We hope this project in the harbor can show how well treaty rights and commercial development can work together," said Andy Whitener, natural resources director for the tribe.

This is the fifth partnership between the tribe and Simpson to boost local salmon populations.

"Starting in 2001, we worked with Simpson to finally remove a fish-blocking dam on Goldsborough," Whitener said. The tribe and Simpson also have partnered on culvert replacements, a habitat restoration project and a wetland reconnection.

"Our partnership with the tribe supports our long-term goal of being good stewards and demonstrating that the economy and the environment can prosper through collaboration," said Dave McEntee, presi-

dent of Simpson Lumber Co. "The dam removal project has resulted in record coho runs returning to the creek in concert with our continued manufacturing focus at our waterfront saw mill facilities."

Because of the previous work by the tribe and Simpson, Goldsborough coho are the only coho run in the region on the upswing.

"Coho around here are on a long-term downward spiral," said Scott Steltzner, habitat biologist for the tribe. "Our work on Goldsborough and in Shelton Harbor shows that we can reverse that trend, at least here."

The first part of the project involves the construction of 14 log-jams at the mouth of the creek. The log structures are designed to capture sediment to correct a massive incising of the creek since the 1990s when a ferry dock was removed.

During another portion of the project, the tribe plans to deposit new sand and gravel near the creek mouth, allowing a natural intertidal area to develop.

"This intertidal habitat would connect with the newly restored creek itself," Steltzner said. "As we reverse the incising, we hope sediment leaving the creek will deposit near its mouth, creating a natural salt-marsh habitat."

Next door, the tribe would work with the Port of Shelton to create a new salt marsh along the shoreline. The grant also would fund the purchase and permanent protection of 14 acres of salmon habitat on Eagle Point.

Other partners on the project include the South Puget Sound Salmon Enhancement Group, Mason Conservation District and the Capitol Land Trust. – E. O'Connell



E. O'Connell

Above: Consultants meet with Squaxin Island Tribe staff at the mouth of Goldsborough Creek in 2012 to discuss restoration options for Shelton Harbor. Below: An aerial photo shows the harbor, which has seen many changes since the 1800s. A new project proposed by the tribe and its partners will restore ecological function to the harbor.



Department of Ecology

"We hope this project in the harbor can show how well treaty rights and commercial development can work together."

– Andy Whitener, Squaxin Island Tribe
natural resources director

“The goal is to see that agriculture and salmon can not only survive, but thrive in the same space.” – Steve Hinton, Skagit River System Cooperative restoration director



K. Neumeyer

Swinomish environmental director Todd Mitchell observes a self-regulating tide gate that is mostly under water in the Smokehouse tidelands.

Tideland Restoration Improves Fish Passage Alongside Farmland

Farming interests in Skagit County often seem at odds with salmon habitat restoration, but an ongoing project by the Swinomish Tribe aims to show that it doesn't have to be that way.

The tribe owns the land known as the Smokehouse tidelands along the Swinomish Channel south of the Swinomish Casino and Lodge. Historically, the land was part of a system of channels that served as estuarine rearing habitat for Skagit River salmon. When the Skagit Valley was settled, the tidelands were diked and drained for agricultural use.

Since 2005, the tribe has restored tidal flow and improved fish passage to the channels by replacing four traditional flap gates with self-regulating tide gates. In addition, three culverts have been replaced by bridges, and several have been removed.

“The big advantage is for fish, but the tide gates also have improved drainage capacity,” said Todd Mitchell, Swinomish environmental director. “As more water comes in, more water goes out. We don't have

the ponds of standing water that you see on other farmland after heavy rain.”

Fifty-foot buffers have been planted between the channels and the farmland. Some of the land will remain in agricultural use, with the tribe leasing it to farmers and monitoring for saltwater intrusion.

“Continued farming provides income for the Swinomish Tribe,” said Steve Hinton, restoration director for the Skagit River System Cooperative, the natural resources extension of the Swinomish and Sauk-Suiattle tribes. “The goal is to see that agriculture and salmon can not only survive, but thrive in the same space.”

The long-term plan is for riparian corridors, tidally connected channels and estuarine wetlands to exist alongside agricultural production.

“Resolving the differences between these competing uses of the resource are essential to significant and meaningful restoration of chinook rearing habitat across the Skagit delta,” Hinton said.

– K. Neumeyer

Tribe Urges Better Regulation for Dairy Farms

The Lummi Nation was forced to close hundreds of acres to shellfish harvest because the region's dairy farms discharge manure into the Nooksack River, which feeds Portage Bay.



K. Neumeyer

Whatcom County's booming dairy and agricultural industry has cost Lummi Nation shellfish harvesters millions of dollars already, and a recent closure of shellfish beds in Portage Bay is adding to the tally.

Manure from dairy cows is discharged into the Nooksack River, which flows into Portage Bay. In September, the tribe closed 335 acres of Portage Bay shellfish beds to harvest because of high fecal coliform levels that exceeded the National Shellfish Sanitation Program standards. Continued poor water quality led to the closure of two additional areas in December, bringing the total to nearly 500 acres of shellfish beds that are unsafe to harvest. More areas may have to be closed in the coming months.

Lummi shellfish harvesters lost an estimated \$8 million in revenue from 1996 to 2006, when 180 acres of Portage Bay shellfish beds were closed for the same reason. The Lummi Nation is pressing state and federal agencies to do a better job of keeping dairy farm manure out of the Nooksack River.

"We do not have jurisdiction to enforce county, state and federal laws in the watershed

so we must rely on Whatcom County, the Washington Department of Ecology, the Washington Department of Agriculture and the EPA to act," said Merle Jefferson, Lummi Natural Resources director. "The federal agencies have a trust responsibility to ensure that the Lummi people can exercise their treaty rights to harvest shellfish in our usual and accustomed areas."

Whatcom County is home to about 46,500 adult dairy cows, which can each generate 120 pounds of manure per day. Dairies store the waste in unlined lagoons that can leak 900 gallons of manure into the ground every day.

Concentrated Animal Feeding Operations (CAFOs) – defined as industrial-sized livestock operations that confine animals to barns or feedlots – are required by the federal Clean Water Act to have National Pollutant Discharge Elimination System (NPDES) permits that regulate how much waste they release into the water.

However, none of the dairy farms in Whatcom County have an NPDES permit.

Smaller farms don't meet the definition of a CAFO unless they have a documented discharge. Most claim not to spill

manure into the water supply, said Andrea Rodgers Harris, a lawyer with the Western Environmental Law Center. Nevertheless, manure is being discharged into the Nooksack River and ground water.

"Ecology has concluded that high nitrate pollution in (Whatcom County's Sumas-Blaine) aquifer is largely due to manure pollution from dairy farms," Harris said.

The federal Environmental Protection Agency (EPA) is working with the state Department of Ecology, which administers the permits, to enforce the Clean Water Act

to "the fullest extent possible using available resources," said Dennis McLerran, EPA Region 10 administrator, in a Dec. 9 letter to the Lummi Nation.

McLerran said a farm that contributes significantly to pollution, even if it does not meet the definition of a "Concentrated Animal Feeding Operation," can be required to get an NPDES permit.

The state is considering legislation, drafted at the direction of Gov. Inslee, to require all applicators of manure to be certified and licensed by the state. – K. Neumeyer

Above: Individual dairy cows can produce up to 120 pounds of manure every day. Below: An aerial photo shows a manure lagoon at a dairy farm adjacent to the Nooksack River.



Kim Koon

Keeping an Eye on the Competition



D. Preston

A bald eagle perches above a tributary near Lake Quinault in January, when many eagles lined the rivers feeding on returning sockeye and coho salmon. Eagles, bears and smaller animals help spread nutrients throughout the watershed by taking salmon carcasses upland.

Nisqually Tribe's Ohop Creek Project Attracts Wildlife

The Nisqually Indian Tribe is taking a look at how creek restoration meant to benefit salmon could also be helping elk, deer and beavers.

"For over a decade we've been planning and conducting restoration on miles of salmon habitat on Ohop Creek," said David Troutt, natural resources director for the tribe. "But what we've really been doing is restoring the ecosystem here. So, obviously, you'd expect other animals to benefit."

The tribe installed a series of wildlife cameras in a newly planted forest near the creek.

"Every time an elk or deer walks by, we get a photo of that animal," said Chris Ellings, salmon recovery manager for the tribe.

The tribe also hired a consultant to conduct foot surveys, tracking wildlife

usage of the restoration site. That information will be added to data collected by volunteers during the past five years. Last spring volunteers spent one intensive day counting and cataloging every bug, bird and plant in the restoration site. This was in addition to monitoring conducted each month by volunteers.

"We know historically that this was a major wildlife corridor, that lots of animals were using the area around the creek," Ellings said. "We hope to find a major bump in what animals are coming down here."

The wildlife survey is part of a much larger restoration project led by the tribe, South Puget Sound Salmon Enhancement Group and Nisqually Land Trust. So far, the project has included digging an entire-

ly new 2.4 mile channel for Ohop Creek, which created better quality habitat for salmon.

The channel was constructed to restore a sinuous stream connected to its floodplain. The floodplain, now replanted with native vegetation, recreates 120 acres of healthy

streamside habitat that controls water temperatures and stabilizes the streambanks.

"We not only changed how the creek looks, but we also are replanting the forest around the creek," Troutt said. "That should have some major benefit to wildlife, in addition to salmon." – E. O'Connell



E. O'Connell

Troy Rahmig, a consultant working for the Nisqually Tribe, checks a wildlife camera near Ohop Creek.

Upper Skagit Forestry Turns Trees to Guitars

Two maple trees harvested from Upper Skagit Tribe timberlands have a musical future ahead of them.

The trees were sold to Pacific Rim Tonewoods, a specialty sawmill upriver from the Upper Skagit Reservation that sells lumber to guitar makers Taylor and Martin, among others. While most guitar tops, sound boards and braces are made from spruce, maple is often used for the back, in part because of its decorative figuring. Figures are not the same as a wood's grain; they are the distinctive pattern trees have when cut perpendicular to the grain direction.

The mill's owner, Steve McMinn, toured a parcel of timberland that the Upper Skagit Tribe owns near its casino off Bow Hill Road. Among several hundred trees, he found one that had the fiddleback, or flame, figures popular on guitar backs. When the parcel was harvested, he discovered another maple with a quilt pattern.

The trees sold for two to three times more than other maples sell to a regular sawmill. The lucrative sale is part of Upper Skagit timberland services manager Robert Schuyler's plan to develop a sustainable forestry operation.

The tribe purchased the parcel almost a year ago. Two-thirds of the trees are cedar, which sells for more than maples to a traditional mill, and the rest is hardwood.

"I've asked the tribe to acquire sustainable timberlands," Schuyler said. "With the sale of this harvest, the tribe can offset some of the land acquisition cost."

Sustainable forestry is a better use for the land than development, Schuyler said. And it suits the tribe's role as natural resources co-manager. With the first harvest done, the parcel will be planted and maintained for future harvest.

"This will keep the forestry crew busy," Schuyler said. – K. Neumeyer



K. Neumeyer

Pacific Tonewoods general manager Eric Warner shows a guitar with a back made from a maple tree.

GENERATIONS



Port Gamble S'Klallam Tribe Archives

Members of the Port Gamble S'Klallam Tribe and friends harvest shellfish near Point Julia in Port Gamble Bay in the 1940s.

HATCHERY MANAGEMENT

Tribal Hatcheries Release 40 Million Salmon in 2014

Treaty Indian tribes in western Washington released more than 40 million hatchery salmon in 2014, according to recently compiled statistics.

Of the 40 million salmon, 13.7 million were chinook. Significant numbers of chum (16.9 million) and coho (8.6 million) were also released in addition to 658,000 steelhead and 456,000 sockeye.

Some of the salmon released by the tribes were produced in cooperation with the state Department of Fish and Wildlife, U.S. Fish and Wildlife Service, state regional enhancement groups, or other sport or community groups.

Nearly all of the chinook

and coho salmon produced at tribal hatcheries were mass marked by removing the adipose fin – a fleshy extremity just behind the dorsal fin on the fish's back. Clipping the fin makes for easy identification when the hatchery fish return as adults and are harvested.

Many of the fish also received a tiny coded-wire tag that identifies their hatchery of origin and is used to determine migration patterns, contribution rates to various fisheries and other information important to fisheries management. A map of the hatchery releases can be found at go.nwifc.org/1n2.

– E. O'Connell



D. Preston



T. Royal

Above: In 2014, more than 600,000 coho salmon were released from Suquamish Tribe hatcheries. Left: Skip Pickett, hatchery technician for Quinault Indian Nation, feeds young chinook in the nation's fish pens on Lake Quinault on the Olympic Peninsula. Sockeye, steelhead and chinook are all reared at the tribal hatchery facility.