*Northwest Indian Fisheries Commission*

# NWIFC News

**Winter 2012/13**
*nwifc.org*

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**Being Frank**

# Fish Consumption Rate Too Low to Protect Our Health

**By Billy Frank Jr.**
**NWIFC Chairman**

Treaty Indian tribes in western Washington are calling on governor-elect Jay Inslee to reset the process of updating the state's unrealistic fish consumption rate that is supposed to protect us from long-term exposure to poisons in our waters.

The fish consumption rate is important because it is one of the factors that the state uses to determine how much toxic pollution that industry is allowed to discharge in our waters. Updating the current rate will help reduce levels of more than 100 pollutants that can make us sick and even kill us over time. For us tribes, pollution denies our treaty rights because those rights depend on fish and shellfish being safe to eat.

The state Department of Ecology promised more than a year ago to develop a more accurate rate, but halfway through the process did an about-face. All it took was for business and industry lobbyists to voice some concerns to stop development of the new rate dead in its tracks.

Tribes across the state have rejected Ecology's proposed new roundtable approach to revise the rate because it does not offer a clear, decisive path forward in a government-to-government framework. In the meantime, tribes have begun talks with the U.S. Environmental Protection Agency to help address the problem.

The state says that 6.5 grams daily – roughly a single 8-ounce serving per month – is how much fish and shellfish we all eat. That standard has been in place for more than 20 years. Oregon's rate, by comparison, was recently increased to 175 grams a day. We think the people of Washington deserve at least that much protection from pollution.

The state acknowledges that the current rate does not protect the majority of Washington residents because most of us eat more than one seafood meal a month. This is especially true for Indian people and members of the Asian and Pacific Islander communities here in Washington. In fact, Washington uses one of the lowest fish consumption rates to set pollution standards, but has one of the highest fish-consuming populations in the nation.

Instead of fighting development of a more accurate fish consumption rate, business and industry could be leading the effort to protect human health in this state. Weyerhaeuser, for example, stepped forward in the mid-1980s to help lead the process that reformed forest practices in Washington. The resulting agreement – the work of tribes, environmental groups, the timber industry and state government – brought protection to fish and wildlife habitat on private timberlands while also ensuring a healthy future for the timber industry.

We stand ready to work with state government, business, environmental groups and others to find a way forward in developing and implementing a more truthful fish consumption rate. We all want a strong economy, but not at the expense of human health or the environment on which we all depend.

I urge our new governor and other elected officials to provide the leadership needed to do what's right and require Ecology to establish a more accurate fish consumption rate in Washington. The health of every one of us who lives here hangs in the balance.

**Learn more at *keepseafoodclean.org*.**


## NWIFC News

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**On the cover:** Lummi tribal member Ramona James, with sons Tyrell, left, and Julius, protests a coal export facility proposed near historic tribal fishing grounds. See story page 4. Photo: *K. Neumeyer*

D. Preston

Despite its pristine appearance, the Hoh River watershed has multiple water quality and fish habitat issues, largely in the lower part of the watershed outside Olympic National Park, as noted in the State of Our Watersheds report.

# Report Gauges Habitat Recovery Progress

Ongoing damage and destruction of salmon habitat is resulting in the steady decline of salmon populations across western Washington, leading to the failure of salmon recovery and threatening tribal treaty rights, according to a report by the treaty Indian tribes.

The tribes created the State of Our Watersheds report to measure progress toward salmon recovery and guide future habitat restoration and protection efforts. It tracks key indicators of salmon habitat quality and quantity over time, from the upper reaches to the marine shorelines of 20 watersheds in western Washington. The report confirms that we are losing salmon habitat faster than it can be restored, and that this trend shows no sign of improvement.

"Indian people have always lived throughout the watersheds of western Washington. We know these places better than anyone else because they are our homes," said Billy Frank Jr., a Nisqually tribal member and NWIFC chairman. "This State of Our Watersheds report clearly shows that we must reverse the loss and damage of habitat if the salmon, our cultures and our treaty-reserved rights are going to survive."

The report includes data gathered over decades of tribal, state and federal efforts to provide a view of watersheds across western Washington, as well as recommendations for protecting those watersheds and the salmon they produce.

Despite massive harvest reductions, strategic use of hatcheries and a huge financial investment in habitat restoration efforts over the past 40 years, the report shows that we are failing to turn the tide on salmon recovery.

"That salmon is us. All of us," Frank said. "Whatever happens to that salmon is going to happen to us. If we can't protect the salmon and its habitat, we can't protect ourselves from the same things that are driving the salmon toward extinction."

*– T. Meyer*

**Key findings include:**

- **A 75 percent loss of salt marsh habitat in the Stillaguamish River watershed is a main factor limiting chinook populations in the river system.**
- **Since the 1970s, herring stocks in the Port Gamble S'Klallam Tribe's area of concern have dropped from healthy to depressed because of degraded nearshore habitat.**
- **In the Chehalis River system, the Quinault Indian Nation estimates that culverts slow or block salmon from reaching more than 1,500 miles of habitat.**
- **Since 1980, the number of permit-exempt wells in the Skagit and Samish watersheds has exploded from about 1,080 to 7,232. This makes less water available for lakes, streams and wetlands, and can harm salmon in all stages of their life.**

**The report also documents:**

- **Increasing armoring of freshwater and marine shorelines by levees, dikes, bulkheads, docks and other structures that harm natural functions and reduce or eliminate salmon habitat.**
- **Disappearing forest cover in our watersheds – especially along rivers and streams – that is not being replaced. Forest cover helps keep stream temperatures low and reduces bank erosion.**
- **A huge network of unpaved forest roads, especially those crossing streams, which contribute to sedimentation that can smother and kill incubating salmon eggs.**
- **Ongoing salmon habitat degradation on agricultural lands because of tree removal, diking and polluted runoff.**

**The report can be viewed online and is available on CD from *nwifc.org/sow*. It is a living document that will be updated as new data become available.**

T. Meyer

A flotilla of tribal and non-tribal fishermen gather at Cherry Point to protest plans for a coal terminal near traditional fishing grounds. If built, the proposed Gateway Pacific Terminal would be the largest coal export facility in North America.

# Lummi Nation Joins Coal Facility Protest

*'We have to remember what we're doing to Mother Earth. You look around us now, the salmon are disappearing. The clams are disappearing. The food of our world is disappearing here. Due to what? Pollution. Even in my lifetime, I've seen some species disappear. It's up to us today to protect Mother Earth.'*

**BILL JAMES, *TSILIXW,***
Lummi Nation,
Hereditary Chief

**Watch a video of the protest: *go.nwifc.org/198.***

Lummi Nation leaders have declared their intention to protect the natural and cultural heritage of Cherry Point, known by its ancestral name as *Xwe'chi'eXen*.

North of Bellingham, Cherry Point is the proposed site of the Gateway Pacific Terminal, a coal export facility that would be the largest in North America if built. Tribal leaders are concerned that coal dust and diesel exhaust could harm salmon and herring habitat, and the coal terminal could destroy underwater archaeological sites and upland burial grounds.

"We have to remember what we're doing to Mother Earth," said Lummi hereditary Chief Bill James (*Tsilixw*). "You look around us now, the salmon are disappearing. The clams are disappearing. The food of our world is disappearing here. Due to what? Pollution. Even in my lifetime, I've seen some species disappear. It's up to us today to protect Mother Earth."

At a gathering in September opposing the coal terminal, tribal members symbolically burned an oversized check.

"We're basically saying that the land is not for sale," said Al Scott Johnnie, tribal cultural assistant.

*Xwe'chi'eXen* was a Lummi tribal village for more than 175 generations. Traditionally, it was a shellfish, herring and salmon fishery area, as well as a reef-net site.

"Just in my short time that I've been here, I've witnessed the depletion of the herring stock," said Lummi Chairman Cliff Cultee. "I can remember when I was 12 years old, fishing with my uncle. That was the last time I remember fishing herring here."

*Xwe'chi'eXen* also is associated with the creation story of the Lummi People and the First Salmon Ceremony.

"Like our ancestors took care of us, we must take care of our future generations," said Lummi Vice Chairwoman Candice Wilson. "My father fished on this water. Sockeye. He raised me to fish too. We survived the Boldt decision, but that's our fish, our water.

"Our eyes are wide open," she added. "We are here. We are never going anywhere. This is our homeland."

*– K. Neumeyer*

# *Tribes Help Guide Response to Climate Change*

Increasing ocean acidity is disrupting the ability of shellfish to grow their shells, threatening keystone species of tribal cultures and economies in western Washington.

"Chitons, gooseneck barnacles, mussels and clams that we eat and the olive shells we use in our regalia – these are iconic shellfish that are part of our cultural identity as a people," said Micah McCarty, Makah tribal chairman.

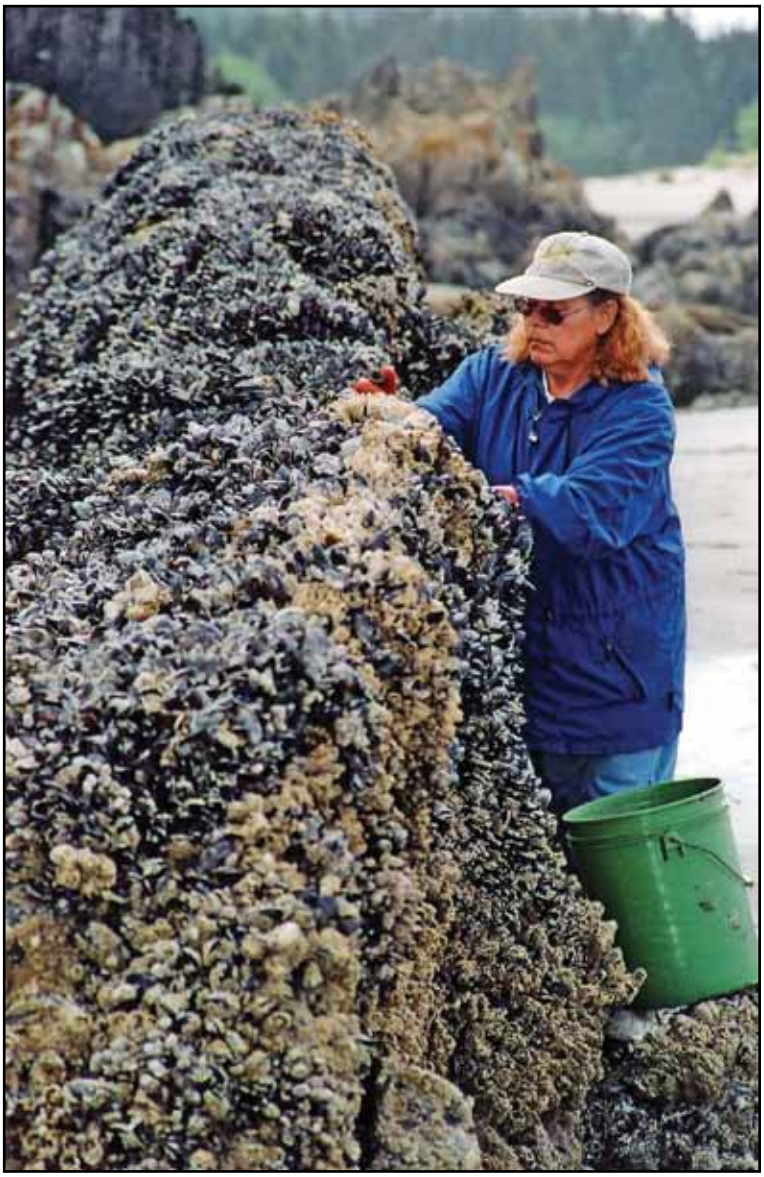
McCarty, along with Tulalip tribal member Terry Williams, is a member of Gov. Chris Gregoire's Blue Ribbon Panel on Ocean Acidification, which recently released recommendations on dealing with the growing problem. The panel was composed of scientists, tribal representatives, government and private industry representatives as well as non-governmental organization members.

Increased ocean acidity is the result of increased levels of the carbon dioxide in the atmosphere that is absorbed by the ocean. The burning of fossil fuels such as oil and coal – together with increasingly polluted surface water runoff – has increased the acidity of the oceans at a rate 10 times faster than any time in the past 50 million years.

Alarm about changes to the ocean was triggered by the death of millions of shellfish larvae that failed to develop shells while being reared in commercial shellfish hatcheries starting in 2009. Washington state is a leading exporter of shellfish in the world, with a harvest valued at $270 million. Some shellfish growers already have moved their operations to other ocean waters that are not changing as fast as Washington coastal waters.

"Washington can be a global leader in adaptation and mitigation strategies for ocean acidification," McCarty said. "In speaking with the Maori tribes of New Zealand while at an international conference, they were not even aware of this problem. They are heavily reliant on shellfish as well. They were hungry for information on this topic. Because these are treaty-protected resources, we can elevate this to a national priority quickly."

Gov. Gregoire included $3 million in the 2013 budget to implement some of the recommendations of the Blue Ribbon Panel. "It's a start that we need to build upon," Gregoire said. – *D. Preston*



*D. Preston*

Gwen Swan, Makah tribal member, gathers blue mussels on Sooes Beach in Neah Bay. Mussels are an important cultural food that is threatened by ocean acidification.

*'Washington can be a global leader in adaptation and mitigation strategies for ocean acidification.... Because these are treaty-protected resources, we can elevate this to a national priority quickly.'*

**MICAH MCCARTY,**
Makah Tribe,
Chairman

**Among the immediate recommendations made by the panel were:**

- **Reduce emissions by working with international, national and regional partners to create a comprehensive strategy to reduce carbon dioxide emissions.**
- **Invest in Washington's ability to monitor and investigate the causes and effects of ocean acidification, by housing a central group at the University of Washington where research already is being conducted.**
- **Inform, educate and engage the public, stakeholders and decision-makers in responding to ocean acidification.**

**A copy of the report and recommendations can be found at *go.nwifc.org/oceanacidreport.***

# *Reconnecting Tidal Channels, Forest Wetlands*

A crew places a box culvert in the Skokomish estuary during the latest phase of restoration. *T. Royal*

The latest phase of the Skokomish estuary restoration effort is the largest to date: 600 acres of forested wetlands are going to be reconnected to 400 acres of Skokomish tidelands.

"The main goal of this phase is to reconnect the historic tidal channels that have been blocked or filled in over time," said Alex Gouley, the tribe's habitat program manager. "Doing that will reestablish the forested wetland to salt marsh connection that's been missing for 70 years.

"When we started excavating channels this fall, we immediately saw the wetlands starting to drain and function properly," he said. "Excavating the historic channels creates paths and routes, allowing the water to flow out of the wetlands."

In addition to channel excavation, small fish-blocking culverts and tide gates will be removed from roads that snake throughout the estuary, including a Mason County road that allows Tacoma Power access to their transmission line towers on the tidelands.

"Tacoma still needs access to those towers, so we can't take out the road," Gouley said. "But we can upgrade it by removing the small culverts and sediment fill that is blocking some of the old channels and replace them with larger culverts and bridges."

Since 2007, the tribe has been restoring the 400-acre estuary at the mouth of the Skokomish River through dike and culvert removal, large woody debris installation and native plant revegetation. A small portion is being completed this fall, while the rest will be done next summer.

"The tidelands have recovered well since we started taking out the dikes in 2007," Gouley said. "Fish are coming back, native plants are taking to the estuary environment and wildlife is abundant. The transformation has been quicker than we expected." – *T. Royal*

Skokomish Tribe hatchery manager Laura Swaim and ProFishent Inc. pathologist David Powell weigh salmon eggs.

# Hatchery Seeks Safer Fungus Cure

The Skokomish Tribe is taking on a global salmon egg problem in its small Enetai Hatchery.

Fungi, specifically *saprolegnia*, that grow on salmon eggs while incubating in hatcheries can be a problem anywhere, whether in cold or warm water, said Laura Swaim, manager of the tribe's hatchery. Typically, egg fungus is treated with Formalin (formaldehyde).

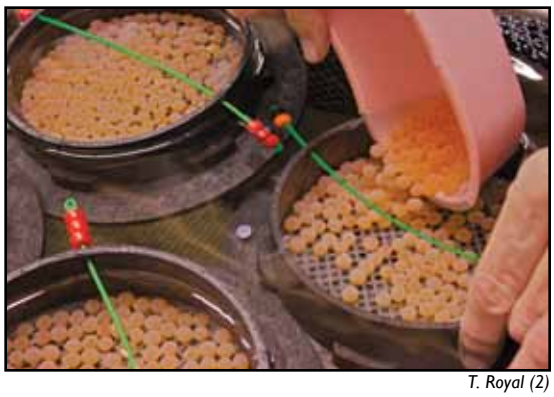
"When I first started in 2008, our egg mortality was 35 to 40 percent because we didn't use Formalin," Swaim said. "After I started using it, our mortality rate dropped to 5 to 10 percent. But Formalin is such a nasty toxic chemical to use."

Working with David Powell of ProFishent Inc., a Redmond-based fish health research company, Swaim is trying non-toxic alternative formulas on a small group of eggs, with hopes that fungus growth will be reduced.

Using eggs from this fall's chum run, Swaim is applying six treatments to 24 samples of eggs, including water, Formalin and natural alternatives, such as cedar tree tea, over a 30-day period.

"We'd eventually like to see the effectiveness of alternative treatments on fungi collected from different geographic areas so we can figure out if certain formulas could be used all over the country," Powell said. – *T. Royal*

Hatchery staff pour eggs into individual containers while researching alternatives for treating a fungus.



*T. Royal (2)*

# Watershed Transformed by Habitat Changes

With the Elwha Dam completely gone and the Glines Canyon Dam nearly demolished, scientists are starting to see a dynamic response to dam removal on the Elwha River.

Mike McHenry, Lower Elwha Klallam Tribe

A helicopter lowers logs into the former Lake Mills reservoir to enhance habitat.

The most obvious effect is the amount of sediment coming downriver. More than 2 million cubic yards of sediment have been transported past the former Glines Canyon dam since the demolition of the dam recommenced in fall 2012. An estimated total of 24 million cubic yards of sediment had built up behind both dams in the past 100 years.

The Lower Elwha Klallam Tribe is monitoring sediment settling in the estuaries at the mouth of the river. With the fall rains and high tides, however, it's been difficult to access the tribe's measuring stations in the estuaries, said Matt Beirne, the tribe's environmental quality manager.

It's obvious, however, that the sediment load in the river is increasing. A plume of sediment at the mouth of the river is clearly visible from any high point in Port Angeles and is still growing, Beirne said.

"It looks like Willy Wonka's chocolate factory on the beaches near the river mouth, with chocolate waves," he said. "The wood debris coming down the river from the reservoirs is starting to pile up on the beaches too."

Nearly eight miles upriver, in the former Lake Mills reservoir, the tribe used a grant from the Environmental Protection Agency to hire a helicopter to haul 440 large logs weighing a total of 818,000 pounds from the edges of the former lake to enhance habitat in newly exposed riverbed and floodplain areas. Revegetation crews from the tribe and Olympic National Park also have been planting native vegetation to restore the newly exposed riverbed.

As for the dam removal progress, there are no signs remaining of the former Elwha Dam. Excavation finished in September, followed by seeding the area, allowing native vegetation to take over.

The formerly 210-foot-tall Glines Canyon dam has been brought down, foot by foot, blast by blast through October. Work paused in November and December to allow fish to make their way upstream, and for sediment to be flushed out. The dam is expected to be fully removed by summer 2013. *– T. Royal*

# Tribe Tracks River Otters During Restoration

Standing on the Altair Bridge in Olympic National Park, members of the Lower Elwha Klallam Tribe wildlife staff peer into the rushing Elwha River below, trying to find signs of river otters in the riffles.

A couple of smooth brown heads break the surface, one playfully pouncing on the other before they dive back under. A few seconds later, four heads pop up while making their way upriver.

Since starting to track river otters in the Elwha River valley last year, the tribe's wildlife staff has been chasing these elusive members of the weasel family. The tribe wants to know what effects dam removal and river restoration will have on the otters, including the population size, eating habits and den areas.

Tribal staff have been setting live capture traps near otter scat and baiting the cages with fish. When an otter is trapped, it is taken to a veterinarian who surgically implants a radio-transmitting tag into its abdomen. After the otter is released, the tribe monitors the animal's movement weekly.

"We've been following a female otter who has been using an 8-mile stretch of the river from the upper reservoir above Glines Canyon dam north to the Olympic National Park boundary for the past year," said Kim Sager-Fradkin, the tribe's wildlife biologist. "The construction, with all the heavy equipment and loud noise, doesn't seem to bother her. We have also managed to tag three others in the lower river."

*– T. Royal*

T. Royal

Biologists Kim Sager-Fradkin, left, and Rebecca Paradis set a river otter trap on the Elwha River.

T. Royal (2)

# More Chum Return to Chico Creek than Forecast

Salmon habitat restoration efforts on Chico Creek are paying off now that fish can move upstream during any streamflow or tide cycle.

The estimated preseason forecast of chum salmon scheduled to return to Puget Sound this fall was 324,000, but inseason test fisheries indicated that the run was stronger than expected. Forecast numbers have been readjusted to reflect that 645,000 chum or more returned to Puget Sound.

Following habitat improvements to the mouth of the creek in 2008, the Suquamish Tribe has seen fish access spawning grounds more quickly in the Chico watershed, one of the biggest producers of salmon in the region.

"Before Kitsap County made improvements below the Kittyhawk culvert in 2008, fish could only make their way into the creek with the help of extreme high tides which only occur during the fall months," said Jon Oleyar, a Suquamish Tribe fisheries biologist. "At low tide, the water level was not adequate to enable fish to jump up and over the 8- to 10-foot drop that was below the Kittyhawk Road culvert. So fish had to move back out with the tide and hold in Chico Bay until the tides once again brought the higher cycle."

Oleyar hikes the watershed weekly during the fall.

"It makes me smile because the restoration work that the tribe, county, and several other entities have been doing on Chico is working," he said. "If we could get a few more restoration projects done upstream, opening up additional spawning habitat, we would probably see a net increase in fish production for both chum and coho salmon.

Restoring the Chico watershed to a fully functioning system without any fish passage barriers is the goal. It will take a lot of coordination, time and money, but we are moving in the right direction." – *T. Royal*

Above, a chum fights its way upstream toward Wildcat Lake. Below, Suquamish fisheries biologist Jon Oleyar surveys Chico Creek.

# Tribal Grant Helps Preserve Lowland Forest

The Suquamish Tribe is helping the Mountaineers Foundation permanently protect 70 acres of stream and wetlands within the Chico Creek watershed.

The tribe awarded a grant that allows the foundation to purchase land that will expand its Kitsap Rhododendron Preserve to 386 acres. The preserve is home to one of the last remaining lowland Puget Sound old-growth forests.

"It produces more wild salmon than any other watershed on the Kitsap Peninsula, so protecting the Chico Creek watershed is fundamental to our long-term goal of maintaining and protecting the health of this ancient wild run of chum salmon," said Leonard Forsman, Suquamish tribal chairman.

"We are dedicated to preserving this unique slice of the natural and human history of the Kitsap Peninsula," said Scott Eby, president of the Mountaineers Foundation. "The tribe's generous grant protects the water and forests surrounding Chico Creek."

The tribal grant is part of the National Estuary Program that is administered by the U.S. Environmental Protection Agency (EPA) to protect and enhance the Puget Sound ecosystem. The EPA distributed funds through the Northwest Indian Fisheries Commission to Puget Sound tribes to implement priority restoration and protection actions. The Suquamish Tribe identified land purchases and restoration in the Chico Creek watershed as its highest priority.

– *T. Royal*

# *Caged Mussels Studied to Measure Toxics in Water*

The Stillaguamish Tribe is working with the Washington Department of Fish and Wildlife to use caged mussels to analyze toxic chemicals in Puget Sound.

The National Mussel Watch Program, run by the National Oceanic and Atmospheric Administration (NOAA), has been monitoring toxic contaminants in lakes and coastal waters since 1986. Stillaguamish has partnered on this effort since 2006.

The state recently began a pilot project in conjunction with NOAA to assess the feasibility of using caged mussels for contaminant monitoring. In previous years, Mussel Watch harvested resident populations, but putting mussels in cages gives researchers more control over the sampling area.

The program also has added pharmaceutical and hormone detection to the list of toxins analyzed.

The Stillaguamish Tribe has adopted two sites in Port Susan Bay for this one-season effort.

"I think it is essential to monitor the presence and trends of toxins in Port Susan Bay, given the impacts of contaminants on salmon recovery and overall wildlife health," said Stillaguamish biologist Jennifer Sevigny. "There are also important links between toxin loads and tribal shellfish harvest."

In November, Sevigny and biologist Franchesca Perez placed bags of Penn Cove mussels in cages anchored in the intertidal zone in two Port Susan locations. The mussels will filter feed, retaining any chemicals in the water for two to four months. When they are retrieved in January, the mussels will be analyzed for 150 toxic chemicals commonly found in Puget Sound, including polycyclic aromatic hydrocarbons, polychlorinated biphenyls (PCBs), pesticides, benzenes and trace metals.

Mussel Watch provides state-to-state comparisons and baseline data ahead of oil spills and large storms. In the long-term, the research will establish trends of toxic chemicals in the Puget Sound nearshore.

*– K. Neumeyer*

Stillaguamish biologists Franchesca Perez, left, and Jennifer Sevigny anchor a cage of mussels off Camano Island. *K. Neumeyer*

*K. Neumeyer*

Stillaguamish natural resources technician Kate Konoski samples water to test how well mushrooms remove contaminants from water.

# Mushroom Spawn Tested to Reduce Fecal Contaminants

Mushroom spawn could be used to help improve water quality in agricultural areas, according to a study being conducted by the Stillaguamish Tribe.

The process, called mycoremediation, allows contaminated water to filter through the fungus' fibrous roots, or mycelia, helping to reduce fecal contaminants.

"Mycoremediation could help improve surface water management on farms by getting rid of fecal coliform without having to excavate or give up farming," said Kate Konoski, a tribal natural resources technician. "It's low-impact, low-cost remediation."

The lower Stillaguamish River watershed is dominated by agriculturally zoned land. Pollutants from farms include excess nutrients, fecal matter and pesticide-contaminated runoff. Excess nutrient and fecal loads can reduce available oxygen, while metals and emerging contaminants can negatively affect salmon spawning.

"Non-point source pollution is one of the biggest challenges to salmon and watershed recovery, because we can't always identify who is responsible," said Franchesca Perez, the tribal biologist who wrote the project proposal. "The usual solutions include fencing and riparian buffers, which are expensive and unpopular with farmers who need to use every square inch of their land to stay in business."

The tribe is working with farmer John Connelly on property along the South Fork Stillaguamish River. Konoski created a barrier around a pile of cow manure with "mycobags" seeded with blue oyster mushroom spawn.

So far, sampling above and below this fungal garden has shown a reduction in contaminants after the water has passed through the fungal root system.

The tribe hopes to expand the project to be a model for other local farmers.

*– K. Neumeyer*

## Fly By Fishing

Hoh tribal fisherman Michael Sampson motors down river after checking his net near the mouth of the Hoh River on the Olympic Peninsula.

Sampson was fishing for hatchery steelhead and coho, and hoping for the occasional king salmon.

D. Preston

# *Quinault Teens Celebrate Tribal Lands Day*

In the deep shade of towering cedars, the exuberance of two dozen Quinault Indian Nation (QIN) teens quiets a little as heads crane back to view a forest canopy several hundred feet high.

Tribal elder and forester Phil Martin Jr. speaks of the canoes that have come from this grove of centuries-old trees, and QIN's management strategy to maintain natural resources for its people.

The tour of the canoe grove was part of QIN's inaugural Tribal Lands Day, where tribal youth learned about natural resources management and how it relates to Quinault culture. Students participated in various natural resources management discussions and learned about jobs that are available in the field.

The tour included a visit to QIN's hatcheries and the restoration of the Upper Quinault River. Students also visited the site of the 2013 Tribal Canoe Journey, Paddle to Quinault, as well as QIN's tree farm where they learned about forest management practices.

The day finished with a salmon dinner that brought together multiple generations to discuss natural resources management that uses both cultural and scientific knowledge.

"It was also a good incubator for future ideas," said Janet Clark, a QIN grant writer who helped organize the event. "In May, we're planning a mini-tour that focuses on the plants – what's edible and the many ways they are used. That will again link different generations and show another aspect of the management of cultural resources." – *D. Preston*

Left, Students encircle an old-growth cedar tree. Below, Phil Martin Jr. holds back a young tree in QIN's canoe grove.

D. Preston (2)

# First Spring Chinook Seen in Upper Puyallup

Eric Marks, Puyallup Tribe of Indians

Until this fall, spring chinook salmon hadn't been seen spawning in the upper Puyallup River watershed in decades.

Surveyors with the Puyallup Tribe of Indians made a surprising discovery this fall: spring chinook spawning in the upper Puyallup River watershed.

"These springers are probably the first early-run chinook up there for more than a century," said Russ Ladley, resource protection manager for the tribe.

The chinook likely are the result of a three-year-old experiment. In 2009, the tribe released nearly 315,000 hatchery spring chinook from two acclimation ponds in the upper Puyallup. The fish were surplus from a hatchery program on the nearby White River that is helping recover spring chinook on that tributary to the Puyallup.

"We weren't sure the springers would come back, but the habitat up here seems to be good for them," said Blake Smith, enhancement manager for the tribe.

In addition to more than 30 live spring chinook, spawning surveyors counted 36 redds (salmon egg nests) on Rushingwater Creek, an upper watershed tributary to the Puyallup River.

For nearly 100 years, a low-lying hydroelectric dam prevented chinook and other salmon from accessing the last 30 miles of habitat in the watershed. When a fish ladder was built around the dam, the Puyallup Tribe took steps to boost natural salmon production in the upper watershed.

"These springers coming back shows how hatchery programs can help jump-start naturally spawning runs," Smith said.

Compared to the rest of the watershed, which has been significantly harmed by development, the upper watershed's salmon spawning and rearing habitat is relatively undisturbed.

"The great habitat in the upper watershed means salmon should be productive up here, once they've gotten established," Smith said.

Typically, early-run chinook have a hard time surviving to spawn since they return to freshwater tributaries during dry, low water months in late summer and early fall.

"We also released springers from a pond on Cowskull Creek, but we didn't see any of them this fall because the creek was pretty dry," said Eric Marks, a biologist with the tribe. "They most likely spawned in the mainstem Puyallup."

*– E. O'Connell*

# Generations

Squaxin Island Tribe

*The print version of this publication incorrectly identified some of the people pictured.*

Members of the Squaxin Island Tribe celebrate a traditional potlach on the Fourth of July around the turn of the 20th century. At that time tribal members were not allowed to practice traditional celebrations. Instead, the Squaxin people invited neighboring tribes to celebrate a ceremonial potlach under the guise of a Fourth of July celebration.

Back Row (from left to right): Ed Cooper, John Wheeler, Guy Jackson, Dick Jackson, Art Young (hiding), Henry Cooper, Leonard Young and Charles J. Johns. Middle: Ivy Jackson, unknown, unknown, Louise Duncan, Mary Jim Jackson Johns, unknown. Front: Vance Partlow, unknown baby, Bennett, Theresa, Sophia Jim Jackson (holding baby) unknown baby,Del Johns Sr. (Mary Jim Jackson holding) unknown boys.

D. Preston

An Ozette sockeye splashes up on a weir in Umbrella Creek, a tributary to Lake Ozette. Some sockeye are tagged as part of the Makah Tribe's hatchery work to assist the recovery of the Ozette sockeye.

# Ozette Sockeye Return

A scarlet Ozette sockeye thrashes in the net held by Makah hatchery technician John "Buster" Ides. Within a few minutes, the wriggling fish receives a bright orange numbered tag just below its dorsal fin from Makah hatchery technician Debbie Cooke and is returned to Umbrella Creek to continue its journey to spawn.

Marking the returning 4-year-old adult fish is part of the tribe's program to assist recovery of Lake Ozette sockeye. The fish were listed as "threatened" under the Endangered Species Act in 1999 when the run dwindled to a few hundred fish.

The tagged fish assist the tribe in estimating total adult returns, helping to monitor how much natural spawners contribute to the run. The tribe's goal has been to collect 100 pairs of adults annually since 2000. The fish are spawned and incubated at the Makah National Fish Hatchery, reared at the tribe's Umbrella Hatchery, and released in Umbrella Creek, a tributary of Lake Ozette.

Between 1997 and 2000, a high of 4,400 returning adults were counted by the tribe, but the average return has been about 2,250 since 1982. The tribe's recovery goal for sockeye is harvestable numbers, not just "museum fish" that are merely self-sustaining.

The primary spawning grounds for Lake Ozette sockeye are two beaches in the lake itself, but oral tradition also points to tributaries such as Umbrella Creek, Big River and Crooked Creek as places that sockeye spawned before the fish nearly became extinct.

The tribe has not fished for sockeye since the 1970s. While a verifiable number for the historical run of sockeye is hard to come by, it is thought, based on fish landings, that the run exceeded many thousands of fish in the early 20th century.

The two spawning beaches on the lake are threatened by encroaching vegetation and increasing amounts of fine sediment that can suffocate eggs. While the lake itself is within Olympic National Park, it is surrounded by private timberlands where road construction and timber harvest impact water quality. One of the historic beach spawning sites already has been lost to these impacts and fish no longer spawn there. Additionally, as sockeye numbers have dwindled, effects of predation by seals, river otters and various other fish species have become disproportionately high. – *D. Preston*

# Studying Weather For Climate Change

As the changing climate alters weather patterns, it becomes more important for natural resources managers to understand existing patterns and to collect continuous real-time data to monitor changes.

That's why the Makah Tribe installed a weather station on lowlands near the Strait of Juan de Fuca. It will transmit real-time, hourly data including air temperature, precipitation, wind speed, wind direction, relative humidity and barometric pressure.

"The data collected will facilitate investigations on the effects of climate change through precipitation patterns," said Kimberly Clark, watershed scientist for the Makah Tribe. "It will also support regional modeling applications for determining streamflow estimations based on precipitation amounts."

The weather station is located in the Hoko watershed, a vital part of the tribe's traditional fishing, hunting and gathering areas. The watershed includes the Makah Hoko Hatchery where chinook, sockeye and steelhead are reared. The tribe also conducts salmon spawning surveys in the watershed and monitors stream temperatures. In addition, the U.S. Geological Survey and Makah Tribe operate a stream gage on the river.

Following final approval of the station by the U.S. Environmental Protection Agency, data from the weather station will be available to anyone on the National Oceanic and Atmospheric Administration or Weather Underground websites. – *D. Preston*

Makah tribal member Mike Dulik, habitat technician, and Doug Sternback, air quality specialist, raise the new Makah weather station in the Hoko River drainage.

D. Preston

D. Preston

Scott Mazzone, marine and shellfish biologist for the Quinault Indian Nation, hikes toward Duck Creek, north of Taholah on the Quinault reservation, to sample for surf smelt eggs.

# *Tribes Survey Coastal Beaches for Smelt Eggs*

As the short winter day turns to twilight, Pacific Ocean waves crash against the rocks on which Scott Mazzone and Alan Sarich stand waiting for the surf to recede so they can access a remote Quinault Indian Nation beach. The pair of QIN marine biologists are collecting samples of sand to check for surf smelt eggs and other forage fish eggs such as Pacific herring, sand lance and rock sole.

The samples are taken to the tribe's natural resources department where they are sieved and examined by microscope for the presence of the tiny 1-millimeter eggs.

Surf smelt are oily fish about 8 inches in length that have been used as a food source by coastal tribes for centuries. Surf smelt also are food for marine species such as salmon, seals and sea birds. Tribes are interested in assessing the health of the populations because some elders, particularly in the Hoh and Quileute tribes, have expressed concern about the declining surf smelt populations.

Access to many of the remote beaches can be difficult, particularly in winter when tides are frequently storm-influenced, and time to grab a sample is short. Some personnel hike 2 miles or farther with 50 pounds of sand samples in their packs.

"It would be better if we could sieve and look for eggs right there – but it's just not logistically possible," said Joe Schumacher, QIN marine scientist.

Since the surf smelt life cycle on the outer coast is not well documented, sand samples will be taken throughout the year to determine spawning times.

"This project is only going to tell us presence or absence," Schumacher said.

The Hoh, Makah and Quileute tribes also are collecting sand samples along the coast to determine where surf smelt eggs are present. *– D. Preston*

## Fish Net

D. Preston

Quileute fisherman Tazzie Sablan hauls in a coho near the mouth of the Quileute River in LaPush. A long, dry fall finally gave way to a brief, frenetic run of coho with some rain.

# Coho Salmon Used in Stormwater Runoff Study

T. Royal

NOAA researchers Kate Macneale and Julann Spromberg place a coho in a bin of stormwater.

Using fish from the Suquamish Tribe's Grover's Creek hatchery, federal agencies are determining just how lethal polluted urban highway runoff is to salmon.

Scientists from the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration's Northwest Fisheries Science Center (NOAA) have been working with the tribe to expose a small number of adult coho salmon to polluted urban runoff.

"We know that toxic contaminants in stormwater are bad for salmon, and that adult coho are dying prematurely in urban watersheds throughout Puget Sound," said Jay Davis, a USFWS contaminants specialist. "The current study is designed to help us determine the underlying cause of death."

Last year, agency scientists exposed adult coho to chemical contaminants that were prepared in a lab to simulate stormwater runoff. The fish were largely unaffected by artificial mixtures of metals and petroleum hydrocarbons.

However, when exposed to actual urban runoff this fall, the salmon quickly developed symptoms of pre-spawn mortality syndrome, include a gaping mouth and loss of orientation and balance. Affected fish display these symptoms just before they die, and adult coho became symptomatic after just two to four hours of being exposed to the stormwater.

Blood and tissues were collected from the hearts, gills and livers of the coho. Genetic analyses of these samples are expected to show physiological stress in fish, such as heart or respiratory failure. Samples from coho exposed to stormwater will be compared to samples from unexposed fish and symptomatic spawners found in Seattle-area streams this fall.

"Urban runoff is a very complex mixture," Davis said. "But we're getting closer to understanding why stormwater is so lethal to coho."

"The tribe has been a good partner to work with," said Nat Scholz, a NOAA research zoologist and ecotoxicology manager. "We like to use the Grover's Creek facility because of the easily available coho, the saltwater-freshwater transition, and the availability of space to do the work. The findings should be applicable throughout Puget Sound, including Kitsap." – *T. Royal*

T. Royal

NWIFC data technician Jared Remington measures the length of a salmon during the chum test fishery.

# Test Fishery Catch Available on Web

The results of this year's annual South Sound chum salmon test fishery show that the run is stronger than originally forecast. Now, those results are getting to biologists and fishermen faster than before.

For 2012, the preseason forecast predicted roughly 324,000 chum salmon returning to Puget Sound. However, after the first three weeks of the test fishery, the run turned out to be much bigger than expected, said Bill Patton, NWIFC's South Sound fisheries biologist. Fisheries managers updated the run size estimate to 645,000.

"We had one set that was the third biggest since the program started in 1981, with 3,143 in one set," Patton said.

The test fishery's progress can be monitored through a website developed by the Northwest Indian Fisheries Commission, at *blogs.nwifc.org/test-fishery*.

The site shows the results of the weekly test fishery within 24 hours of the catches; up until last year, it took at least a few days for the numbers to be released.

"The website has been something that people have appreciated, since they can get information immediately and plan where they are going to fish, such as in Hood Canal or Areas 10 and 11," Patton said. "It's been a useful tool for everyone."

The test fishery provides both tribal and state fisheries managers with accurate data about the run size of the chum headed for South Sound.

In addition to counting fish, scale samples are taken to determine age and tissues are taken from about 200 fish each day for genetic testing. The test fishery extends from October through mid-November. – *T. Royal*

# Midway Creek Opened for More Salmon Habitat

E. O'Connell

Coho salmon migrate past a short waterfall on Goldsborough Creek, where a dam removal improved access to Midway Creek. Two culverts recently were replaced in Midway Creek, making fish passage even more accessible.

The Squaxin Island Tribe joined the South Puget Sound Salmon Enhancement Group, Simpson Lumber and the Green Diamond Resource Co. to open nearly a mile of salmon habitat by removing two fish-blocking culverts.

The culverts blocked Midway Creek, a tributary to Goldsborough Creek, and ran underneath a railroad owned by Simpson Lumber, which contributed significant funding to the project.

"Midway Creek is relatively undisturbed, so fish will be able to use excellent habitat when we're done," said Sarah Zaniewski, a salmon biologist with the tribe. The enhancement group and the tribe replaced two undersized culverts with one 14-foot-wide culvert that will provide a more natural stream channel.

"In addition to some great spawning habitat, the fish that make it up Midway Creek will also have access to deep rearing pools and wetlands," said Brian Combs, biologist for the enhancement group.

Culverts like the one that block Midway Creek are not rare.

"There are thousands of culverts like this one throughout Puget Sound," Zaniewski said. "They block a lot of salmon habitat throughout the region. Salmon need that habitat to thrive."

The work to open salmon access to Midway Creek builds on an effort more than a decade ago to bring down a dam on lower Goldsborough Creek.

"After the dam came down, salmon were able to access the upper 25 miles of the Goldsborough Creek watershed," Zaniewski said. "Freeing Midway Creek will give salmon even more habitat to use."

*– E. O'Connell*

# Tribes Monitor Changes After Culvert Removal

When Sierra Pacific replaced an inadequate culvert with a 45-foot bridge over a tributary to the Skagit River, enough sediment had accumulated behind the fish barrier to fill 30 dump trucks.

Biologists with the Skagit River System Cooperative (SRSC) monitored the channel, habitat quality and fish distribution before and after the 2008 culvert removal in Hooper Creek near Concrete. SRSC is the natural resources management arm of the Swinomish and Sauk-Suiattle tribes.

As the landowner, forest products company Sierra Pacific is required to fix culverts that block fish passage.

Forest and fish biologist Mike Olis was pleasantly surprised to discover an increase in habitat quality downstream of the project area. A year after the bridge was built, Olis counted almost three times the number of the large pools (with at least 3 square feet of surface area and 1 foot of residual depth) fish need to feed, rest and stay cool.

"We were expecting some pool-filling from the released sediment," he said. "The increase in pools is good for the fish."

Hooper Creek's resident cutthroat trout quickly took advantage of the newly accessible habitat. In 2009, a year after the project was completed, surveys found 23 trout above the new bridge, including one as far as about a half mile upstream. In 2010, there were 137 fish. Of those 101 were younger than one year.

Jeff Phillips, SRSC

A cutthroat trout is counted and measured in newly accessible habitat in Hooper Creek.

Coho also spawn in Hooper Creek, but year-to-year spawner surveys don't necessarily reflect changes in habitat following the culvert removal because run sizes vary. More coho were seen spawning after fish passage was restored, but there also was a larger coho run that year. What the numbers do show, however, is that the release of 300 cubic yards of sediment didn't have a negative effect on coho spawning.

*– K. Neumeyer*

# Fencing Elk Out of Private Property

K. Neumeyer

Upper Skagit tribal staff install a fence to keep nuisance elk from damaging private property near Mosquito Lake in Whatcom County.

The Upper Skagit Tribe is building an 8-foot-tall, 4,000-foot-long elk exclusion fence as part of a cooperative elk management project near Mosquito Lake in Whatcom County.

The Washington State Department of Fish and Wildlife (WDFW) provided the materials and arranged to have the fence built at the request of the landowners because resident elk were competing with their cattle for available pasture forage and causing property damage.

While WDFW has an obligation to preserve, protect and perpetuate wildlife, the agency also has to ensure that animals do not threaten human safety or cause unreasonable damage to crops, livestock or property.

Meanwhile, tribal and state co-managers have worked for years to recover the dwindling Nooksack elk population in the North Cascades Mountains.

"We don't always agree about how best to manage the elk damage issue, but we all want to address the needs of our neighbors while continuing cooperative efforts to recover the North Cascades elk herd," said Upper Skagit natural resources director Scott Schuyler. "This is a very short-term fix to a bigger problem, because it doesn't address the immediate need to increase quality elk forage for the growing herd."

The co-managers need to agree to forest management practices that promote natural deer and elk forage in addition to expanding efforts to create man-made forage plots, Schuyler added.

"The Upper Skagit Indian tribe continues to provide leadership by seeing the bigger picture and working collaboratively to address these issues and gain the trust and support of the agricultural community," said WDFW wildlife biologist Chris Danilson.

*– K. Neumeyer*

## Walking On

### James "Jim" Wilson *Culaxten*

Lummi Chief *Culaxten*, James Henry Wilson, died in his home Oct. 25 at the age of 87.

He was born to Margaret and Clarence Henry Wilson on Sept. 20, 1925 on the shores of Village Point.

Wilson was a lifelong fisherman and served on the Northwest Indian Fisheries Commission and the Lummi Fish Commission.

Known as "The Governor" and "Uncle Jimmy," Wilson served the Lummi Nation for more than 38 years, including positions on the Education Board, Housing Board and Stommish Committee, and as chairman of the Lummi Water and Sewer Board.

He was preceded in death by wife Roberta Hunt Wilson; his parents; stepfather August Casmir; son James Wilson Jr.; grandsons David Wilson Jr., Derek Wilson Jr. and Brock Wilson; brothers Rudy, Alvin, Gary and Mike; and sisters Lila, Florence, Mary and Violet.

He is survived by his brother Gordon and sister in-law Helen; his children Deborah and Charles, Laurie and Thomas, Cynthia and Norb, Dana and Raquel, David and Anna, Heather and Richard, Althea and Steve. He was blessed with 76 grandchildren.

Wilson is remembered for his motto, "Respect yourself. Respect others. And a little love will go a long way."