Northwest Indian Fisheries Commission

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Lincoln’s Birthday Special to Tribes

By Billy Frank Jr.
NWIFC Chairman

We’ve been hearing a lot about Abraham Lincoln in recent months after the release of the movie about how he abolished slavery by pushing the 13th Amendment to the U.S. Constitution through Congress.

Not many people know it, but Lincoln’s birthday on Feb. 12 also holds a special place in the hearts of the treaty Indian tribes in western Washington.

It was on that day in 1974 that federal Judge George Boldt handed down his landmark ruling in U.S. v. Washington that upheld our treaty-reserved fishing rights and established us as co-managers of the salmon resource.

Although he was ready to rule sooner, Judge Boldt purposely delayed the court proceedings so he could deliver his decision on the birthday of one of the greatest presidents we’ve ever had, a president who upheld the basic human rights of all people. And that’s what Judge Boldt did. He upheld our rights, and for that we will always be grateful.

It’s been 39 years now since Boldt’s decision, and things have changed a lot since then.

More than 1 million people have moved into western Washington, making a big impact on our natural resources.

Herring populations – an important food for salmon – have shrunk to a small fraction of former levels in Puget Sound.

Our floods and droughts have gotten worse because of climate change and changes we’ve made to our landscape.

We’ve lost nearly all of our old-growth forests, native prairies and salt marshes.

We’ve also lost most of our salmon harvest. Ongoing damage and destruction to salmon habitat have led to tribal harvest levels that are lower than they were in 1974, and this trend isn’t showing signs of improvement.

Nonetheless, we are hopeful as we begin planning for the 40th anniversary of the Boldt decision next year.

As part of the celebration, a pair of movies that focus on the treaty fishing rights struggle were recently released by our friends at Salmon Defense, a non-profit organization working to turn the tide for salmon.

The first is “As Long as the Rivers Run,” the fundamental documentary about the Fish Wars of the 1960s and 70s by Carol Burns and Hank Adams. They generously donated the film to Salmon Defense so that it can be preserved and shared.

The second movie is “Back to the River,” which was produced by Salmon Defense to provide additional perspectives on treaty rights and the natural resources management challenges we face today.

Both of these movies are available for free by contacting Salmon Defense at salmondefense.org or by calling (360) 528-4308.
Now that the first winter has passed with the Elwha Dam demolished and the Glines Canyon Dam nearly gone, scientists are watching how the Elwha River handles millions of cubic yards of sediment coming downstream.

Originally estimated at 24 million cubic yards, scientists have re-estimated the total amount of sediment built up behind the two dams the past 100 years to 34 million cubic yards. The revision came after the discovery that surveyors made errors while determining elevations in the early 20th century.

Scientists believe that 6 million cubic yards have flushed out of the system since dam demolition started in September 2011.

“The large plume extending into the Strait of Juan de Fuca appears to be made of the really fine material, like sediment and clay, but the heavier materials, such as sand and wood debris, are showing up at the mouth, nearshore and within the estuary,” said Matt Beirne, the Lower Elwha Klallam Tribe’s environmental quality program manager. “We’ve had deposits of silt and sand up to several feet in depth in these areas, and even a sand spit developing from the west side of the river mouth and extending east.

“We’ve had to move around some of our water quality and sampling instruments to deeper locations in the estuary to avoid getting buried.”

As the sediment flushes out, it is restoring the beaches at the mouth of the river.

For decades, the beaches were noted for their cobblestone terrain because the dams prevented a regular downstream transport of silty and sandy material. Since dam removal, the beaches have started to fill with sand, creating better habitat for shellfish and forage fish.

At the same time, the sediment has clogged the National Park Service’s industrial water treatment plant and, in turn, affected the tribe’s hatchery water intake system. The plant was built to treat river water for industrial use, such as the tribe’s hatchery, the local paper mill and the state’s chinook rearing facility on the river.

While the plant receives upgrades and repairs, the deconstruction of the Glines Canyon Dam has been put on hold until April 21. The dam still is expected to be fully removed by the end of 2013.

All the sediment-laden water is coming from the former floors of the now dewatered Aldwell and Mills reservoirs. The tribe’s revegetation crew has been planting native vegetation throughout the exposed lakebeds during the past year. Oceanspray, Nootka rose, Douglas fir, snowberry, elderberry and thimbleberry plants are growing on the new banks of the Elwha River.

“We’ve been out here practically daily for a good year now watching how the river has changed,” said Phillip Blackcrow, the tribe’s revegetation crew supervisor. “It’s been pretty wild seeing old-growth stumps and trees emerge as the lakebeds have washed away.” – T. Royal

The sediment flushing out of the Elwha River is starting to develop a sandbar that extends east of the mouth.

Fish Released into Elwha River, Tributaries

The Lower Elwha Klallam Tribe has collected, tagged and re-located adult coho salmon from lower Elwha River hatcheries to two tributaries, Indian Creek and Little River, and the river’s mainstem. The effort, in its second year, was in partnership with the Washington Department of Fish and Wildlife and the National Oceanic and Atmospheric Administration.

In December, 318 fish were released to encourage spawning in the tributaries located between the two dam sites, but unaffected by dam removal. Another 10 fish were released into the mainstem above the Highway 101 bridge.

Prior to release from the state’s Elwha River chinook rearing facility, the gender, length and coded-wire tag (CWT) of each fish were noted. The CWT, inserted in the snout of the fish at a young age, informs fisheries managers when and where the fish originated when caught by fishermen or upon its return to a hatchery.

In addition, a tag was attached to each fish’s dorsal fin so the tribe and agencies can track its release date and location if caught. The 10 fish released into the mainstem were outfitted with just radio tags so the tribe can track their migration patterns using a telemetry system. – T. Royal

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The Sauk-Suiattle Tribe is determined to eradicate invasive knotweed in its watershed. Knotweed is a fast-growing invasive species, and some infestations are so extensive that all natural resources managers can do is control its spread. The plants can grow 15 feet tall and crowd out native vegetation needed for quality fish and wildlife habitat.

“During the fall, knotweed plants transfer significantly more nutrients from the leaves to the roots than do native riparian plants. When they drop their leaves, fewer nutrients are available for bacteria, insects and fish,” said Andrew McDonnell, Sauk-Suiattle natural resources field coordinator. “Knotweed has no value for wildlife and is detrimental to salmon.”

The Nature Conservancy tracked and managed knotweed in the Sauk watershed from 2001 until the Skagit Fisheries Enhancement Program took leadership. Sauk-Suiattle joined the project in 2011, supporting knotweed eradication with McDonnell as field coordinator and a crew from the Washington Conservation Corps.

Each year, the crew spends six weeks surveying a 3-square-mile area spanning 11 river miles. When they find new patches, they spray the leaves with an herbicide that is approved for aquatic use. They also note where previously treated patches of knotweed have died, and where the plants still survive.

Since 2001, 609 knotweed patches have been documented between the mouth of the Sauk River and its confluence with the Suiattle. Last summer alone, surveyors found 130 new patches and 233 that were dead.

“Thirty-eight percent of the knotweed patches in the project area have been eliminated,” McDonnell said. “Every year we have to go back and check on the ones that were dead to make sure they haven’t come back. We try to visit every patch that’s known.”

Andrew McDonnell, Sauk-Suiattle Tribe

Knotweed grows on the Sauk River, with Sauk Mountain in the distance. The Sauk-Suiattle Tribe is working with the Washington Conservation Corps to eradicate the invasive plant.
Habitat Restoration

Restoring Tidelands with Piling Removal

The Squaxin Island Tribe, private landowners, the Port of Olympia, and the Department of Natural Resources are joining together to clear much of southern Budd Inlet of creosote pilings.

The idea for the large-scale cleanup was spawned when the Squaxin Island Tribe received 3 acres of tidelands as a donation from a family estate. The tidelands included 224 pilings from a former industrial site.

“We saw this as an opportunity to restore these tidelands by taking out the pilings that are leaching pollutants into Budd Inlet,” said Andy Whitener, natural resources director for the tribe.

The project will clear approximately 400 creosote-treated pilings and 7,000 square feet of structures such as piers and docks from four sites along the west side of inner Budd Inlet.

“The Port of Olympia appreciates the opportunity to partner with other local entities on a project that helps improve the health and safety of South Puget Sound,” said George L. Barner Jr., Port Commission president.

The multi-partner team also includes private landowners such as Sarah Smyth McIntosh, president of Delta Illahee and owner of Smyth Landing in Olympia. Blackwater Marine of Kirkland is the contractor for the project.

Creosote pilings leach pollutants into Budd Inlet that are harmful to marine life. For example, salmon migrating past the pilings could have stunted growth and reduced immunity to disease. Other species on which salmon depend, like herring, are also impacted by creosote pollution. – E. O’Connell

Daniel Kuntz, biologist with the Squaxin Island Tribe, inspects creosote pilings on the tribe’s property before they are removed by the Department of Natural Resources.

New Ediz Hook Beach Benefits Fish, People

Since concrete structures and pilings were removed from a 1,200-foot-long stretch of Ediz Hook nearly a year ago, the popular Port Angeles recreation area looks like a natural beach again.

The Lower Elwha Klallam Tribe and Department of Natural Resources (DNR) restored the former log dump area in 2012 by removing the man-made structures, riprap and about 5,000 yards of fill material contaminated with various levels of hydrocarbons. The area was a highly active industrial site for forming log rafts during the 20th century.

The site, known as the “A-Frame” because of a former structure, used to be dominated by a dock made of creosote-treated pilings, which were removed in 2008 by DNR.

In 2012, the remaining materials, such as shoreline armoring, concrete chunks, metal scraps and other debris were removed either by machine or by hand.

“After bringing in clean sand for the beach, we immediately saw the benefits for the forage fish and folks who use the area for recreation,” said Mike McHenry, the tribe’s habitat program manager. “It’s a safer place for everyone to hike and explore and for marine life to thrive. And today it looks even better than it did when we finished it last fall.”

Lower Elwha Klallam Tribe natural resources technician Sonny Sampson sorts through seaweed looking for trash and concrete debris on Ediz Hook.

E. O’Connell

T. Royal
The Stillaguamish Tribe recently partnered with the Department of Natural Resources Family Forest Fish Passage Program to restore access to Cherokee Creek near Darlington.

Cherokee Creek provides spawning, rearing and refuge for coho and other species of Pacific salmon, as well as cutthroat and bull trout. However, the creek also was home to a deteriorating metal culvert that had been poorly installed and was too small to withstand floods.

“The culvert had created an artificial waterfall that was too high for salmon to swim or jump past on their way upstream,” said Scott Rockwell, forest and fish biologist for the tribe. “It was also interfering with natural stream ecology, interrupting the downstream movement of water, fallen trees and gravel.”

The Family Forest Fish Passage Program replaced the culvert with a steel bridge and an 80-foot-long section of stream channel that restored fish access to more than a mile of productive spawning habitat. The state program helps small forest landowners comply with forest practice rules by covering 75-100 percent of the cost of eliminating stream barriers.

At a fall event celebrating the project’s completion, many coho salmon swam through the restored area.

“Their genetic compasses guided them back to habitat that had not been accessible for years,” said Washington State Forester Aaron Everett, who worked on the project.

As a project sponsor, the Stillaguamish Tribe conducted landowner outreach, collected habitat data, provided matching project funds, and managed project design, construction oversight, permitting and billing.

Cherokee Creek is a spawner index stream for coho salmon. For the past 12 years, Stillaguamish natural resources staff have documented the number and location of spawning adults and redds (egg nests) to help forecast the size of future coho runs.

For more information about the state’s Small Forest Landowner Office, visit www.dnr.wa.gov/sflo. – K. Neumeyer

Rain Garden Intercepts Stormwater Runoff

A new rain garden on the Swinomish Reservation will help filter stormwater runoff.

A drainage ditch runs along Snee-Oosh Road from the west side of the Swinomish Reservation to the road’s terminus at Swadabs Landing.

Recently, the Swinomish Tribe constructed a 5,000-square-foot rain garden to filter stormwater runoff from that ditch before the water reaches the Swinomish Channel.

A pipe from the rain garden will collect water and run it through a bioswale filled with plants and soil that act as a sponge to filter out sediment, oil and heavy metals. The garden itself is completed, but the newly planted vegetation needs a season to get established, said Swinomish water resources manager Todd Mitchell, so the pipe likely will be connected to the drainage ditch in the fall.

The Snee-Oosh rain garden will benefit the restored salmon habitat by keeping pollutants out of the estuary. Potential contaminants in stormwater runoff include dissolved metals such as copper shavings from car brake pads. Even in trace amounts, copper can be fatal to juvenile salmon. The metal interferes with salmon’s alarm pheromones, making them vulnerable to predators. It also impairs breathing, brain function and sense of smell, interferes with migration, and depresses the immune system. – K. Neumeyer
Tribe, USGS Map Skokomish Estuary Seafloor

If the waters of Hood Canal were drained from the Skokomish delta, the exposed seafloor would show a complex network of channels that leads to steep ridges on the bottom of Hood Canal.

The Skokomish Tribe is working with the U.S. Geological Survey (USGS) to use sonar to map the topography, morphology and habitats of the delta and the tribe’s 1,000-acre estuary in southern Hood Canal.

The goal is three-fold: to determine the amount and condition of existing nearshore habitat; to better understand how the river’s sediment moves to the delta; and to learn how sediment affects ecosystems, including eelgrass, tidal flats and food resources for salmon.

“We’re mapping what’s in between the nearshore and deeper waters,” said Eric Grossman, the project’s USGS principal investigator. “It’s an area that’s been studied sporadically since the 1950s but is lacking data on elevation, substrates and physical processes, such as sediment movement.

“We’d like to see what habitats exist for salmon, such as eelgrass and the ridges, in order to determine how they may change with actions in the river, climate change and the estuary restoration work,” Grossman said.

Preliminary findings include tidal channels transporting sediment from the river to the canal; eelgrass beds; and ridges at the base of the delta that stand 45-90 feet tall, 300-450 feet apart and up to a half-mile in length.

“The slope of the delta front is one of the steeps I’ve seen in our mapping of Puget Sound deltas,” Grossman said. He also observed channels and slump features that suggest the delta is actively changing.

These features provide complex habitat that has been found to be important for fisheries and ecosystems, Grossman said.

With the updated information, the tribe hopes to further study the large ridges.

“We would like to better understand the age and substrate of these ridges and how they formed,” said Shannon Kirby, the tribe’s habitat biologist.

Squaxin Island, State Study Oakland Bay Circulation

The Squaxin Island Tribe and the Department of Health are conducting a water circulation study in Chapman Cove to learn more about persistent pollution in shellfish.

“The study will help us understand just how tidal currents spread upland pollution around Oakland Bay,” said John Konovsky, the tribe’s environmental program manager.

Using drogues – kite-like devices suspended beneath a buoy and pulled along by currents – tribal staff can determine how upland pollution is carried to different parts of the cove. Global Positioning System devices are attached to the drogue buoys, so each can be precisely tracked.

Chapman Cove is on Oakland Bay in deep South Sound. The cove has been closed to shellfish harvesting for five years because of fecal coliform pollution. In recent years, Mason County has tracked and cleaned up several failing septic tanks nearby, but pollution in the cove persists.

“Once we get a clearer idea of exactly where water in the cove comes from, we’ll have a much better plan of action to clean up the bay,” Konovsky said.

The Squaxin Island Tribe is part of a larger partnership to clean up Oakland Bay.

“Recently, several other parts of Oakland Bay were upgraded for shellfish harvesting,” said Andy Whitener, natural resources director for the tribe. “While our efforts to clean up the bay are starting to see success, Chapman Cove still needs some work.”

– E. O’Connell
Is low oxygen in the ocean near Taholah killing off young crab each year, threatening the future of the fishery? That’s the question Quinault Indian Nation (QIN) wants to answer using special equipment to measure the extent and depth of low oxygen events.

QIN has requested a grant to pay for instruments that would measure dissolved oxygen from inside crab pots.

“It’s a great way to get them distributed as part of a fisherman’s normal crab pot routine, and they can retrieve them once a month for us so we can download the information,” said Joe Schumacker, marine scientist for QIN. “Right now, all we know is that dead fish and crab have washed up on our shores in varying degrees in the summer for the past few years. We have no idea how far the low oxygen zones extend or how long they last.”

Dungeness crab is served in many fine restaurants and is a signature Washington state seafood. It forms the mainstay of the fishing season for many tribal members on the coast and in Puget Sound.

“Crab has always been a cultural resource for us,” said Ed Johnstone, fisheries policy representative for QIN. “Ever since we have been on these shores, the abundant crab and razor clams sustained us along with the greens of the sea.”

There is no oral history among Quinault people for consecutive seasons of this sort of die-off.

“Many a QIN fisherman’s annual income is dependent on crab, hands down,” said Scott Mazzone, marine and shellfish biologist for QIN.

QIN has one measurement of a die-off in 2006 when a QIN fisherman was pulling his crab pots in a line running north and south.

“As he headed north toward Taholah, he was getting live crab in his pots until he crossed the Moclips River,” Schumacker said. “Then it was pot after pot of dead crabs until just past the Quinault River. That’s about eight miles.”

One of the things QIN would like to know is if oxygen-poor water is settling over young crabs that take refuge in nearshore areas.

“Maybe we’re losing whole age classes sometimes. We just don’t know,” Schumacker said.

Poorly oxygenated water naturally upwells from deep in the ocean during summer months and is oxygenated at the surface. But the upwelling doesn’t seem to be occurring during some summers.

“These events tend to happen when the winds and the ocean go calm,” Schumacker said. – D. Preston
After five minutes in the 47-degree water of the Pacific Ocean, a person without a survival suit loses the ability to manipulate their hands and feet. In less than 15 minutes, the relentless cold can force the core body temperature low enough to cause unconsciousness and death.

These sobering facts make sea safety courses for Makah tribal fishermen serious business.

Of the 545 U.S. commercial fishermen deaths between 2000 and 2011, 182 perished after falling overboard, and none were wearing a personal flotation device, according to the Centers for Disease Control and Prevention.

“The ocean doesn’t give you second chances,” said Neil Lyons, Makah skipper of the Rondi. “You have to have your A-game out there. Safety is a priority.”

Lyons has been fishing since he was 10 years old and a commercial fisherman for more than 18 years. This will be his fourth season as a skipper for John McCarty’s boat.

“I really appreciate the tribe bringing the safety course here every year,” he said.

While Lyons has never had to abandon ship, he’s had a few close calls, including weathering a storm much fiercer than predicted.

“It was my first year of being a skipper. Waves were more than 25 feet with reported winds of more than 85 miles per hour. The wave and wind direction were at odds with each other, creating really chaotic seas,” he said.

Wind-driven snow kept accumulating on the windows, so he used a side window to navigate.

“I piloted the boat for 27 straight hours to get us home. It was my responsibility. I had to be calm and try not to show the crew I was worried – but I got all the survival suits out and ready.

“The power was out in Neah Bay when we arrived home at 3 a.m. The eagles were all clustered in a tree and singing, which was unusual for that time of night. It was like they were telling me I had better listen to the ocean. It was a big lesson that I took seriously. ‘You should never be afraid of the water,’ is an old saying we are taught here. But you have to respect it.”

During the safety course, Lyons and the other fishermen took turns practicing the protocol when someone goes overboard, basic communications with the U.S. Coast Guard during emergencies, and abandoning ship. Also covered were engine and flooding emergencies and using a Coast Guard pump when the vessel takes on water.

Washington Sea Grant has partnered with the Makah, Quileute and Quinault Tribes to offer the safety course for nearly 20 years. Skippers of all fishing vessels must take the course by federal regulation, but entire crews often take the course. It is recommended that skippers take a safety refresher course every five years, which is slated to become a requirement by 2015. – D. Preston

Top: After practicing getting in their survival suits and abandoning ship, Makah fishermen link up and backstroke together to a life raft as part of their sea safety training in the tribe’s Neah Bay marina.

Bottom: Makah fisherman Mitchell Murner practices using a new emergency flare in Neah Bay.
For the fourth year in a row, the Suquamish Tribe worked with the U.S. Navy and Washington Department of Fish and Wildlife (WDFW) to transfer nearly 220,000 coho smolts from the tribe’s hatchery to its net pens.

“Working with the Navy to help move the coho has been key to the success of the program since we revitalized it in 2010,” said Jay Zischke, the tribe’s marine fish manager.

The tribe’s net pen operation was put on hold between 2003 and 2010 due to rearing space and budget constraints. Prior to 2003, the tribe released coho smolts into Agate Pass for two decades for both tribal and non-tribal fisheries.

The young fish for this year’s transfer were reared at the tribe’s Gorst Hatchery. In February, the smolts were taken to the Naval Undersea Warfare Center (NUWC) at Keyport using a WDFW tanker truck.

At Keyport, the smolts were transferred from the truck to a tribal barge, which ferried the fish to the Agate Pass net pen. The pen is slightly smaller than an Olympic-sized swimming pool. The fish remain in the pen until June, acclimating to the saltwater environment and imprinting on the area prior to being released. The delayed release strategy from net pens has shown to increase ocean survival for coho.

“NUWC Keyport and the Navy are pleased to partner with our Native American neighbors to ensure our natural resources are enjoyed and preserved for generations to come,” said Capt. Dave Kohnke, commander, NUWC Keyport.

Net pen operations like this are common throughout Puget Sound and contribute greatly to fisheries. During the first two decades of the Agate Pass program, 600,000 hatchery coho were released each year from the net pens.

Since the program restarted in 2010, the partnership has transferred nearly 1 million smolts to the net pens.

— T. Royal
The Puyallup Tribe of Indians is raising juvenile spring chinook in hatchery acclimation ponds, having picked up the state’s White River spring chinook enhancement program.

The tribe is raising 250,000 spring chinook at its Diru Creek Hatchery to stock acclimation ponds in the upper White. Legislative budget cuts forced the Washington Department of Fish and Wildlife to cease their White River spring chinook program.

“We used to get these fish from the state, but now the Muckleshoot Tribe is allowing us to have some of their excess spring chinook,” said Blake Smith, enhancement manager for the Puyallup Tribe. The Muckleshoot Tribe also raises White River springers at one of their hatcheries.

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The state’s White River spring chinook program had been one of the oldest salmon recovery projects in the state. The effort began nearly 40 years ago when the state started capturing fish from the weak run for the broodstock program.

“Probably the only reason we have White River springers to protect is because of the state’s early action,” said Russ Ladley, resource protection manager for the Puyallup Tribe.

In 1986, only six spring chinook returned to the White River, putting the viability of the run in question.

“At the time, there was a chance that so few fish would return that the run would blink out,” Ladley said.

When the Muckleshoot Tribe opened its hatchery on the White River, fisheries managers began releasing the spring chinook into the river to supplement the run. Because of diligent hatchery management, the spring chinook population on the White River has slowly increased, with returns typically in the thousands.

After being transported to the acclimation ponds, the juvenile spring chinook will be fed by the tribe for eight weeks. Once they are imprinted on the upper watershed creeks, they’ll be released to begin their journey to the ocean.

The acclimation pond program has played a large role in the recovery of the spring stock.

“More and more springers are coming back each year to the upper tributaries,” Smith said. “Some creeks went from zero spawners to dozens in the last decade.” – E. O’Connell
The Nisqually Indian Tribe is hoping to learn about habitat restoration in Ohop Creek by tracking juvenile salmon with Passive Integrated Transponder (PIT) tags.

Two years ago, the tribe, the Nisqually Land Trust, and the South Puget Sound Salmon Enhancement Group restored a mile of Ohop Creek by building an entirely new channel. The new channel stays cooler for salmon and features logjams that benefit both juvenile and adult fish.

“Ohop was transformed from a straight, deep ditch to a shallow, meandering stream that is good for salmon,” said David Troutt, natural resources director for the tribe.

Tags will be inserted into nearly 2,000 juvenile salmon captured in the upper reaches of the creek. The tagged fish then will be released and tracked as they swim through restored and unrestored stretches of the creek.

“Basically, what we’re trying to figure out is how young fish are using the restored parts of the creek,” Troutt said. “Are they hanging out in the restored section longer? This information will help us see how successful we were and decide how we can best restore the rest of the creek.”

Eventually, 7 miles of Ohop Creek could be restored under a plan being developed jointly with local landowners.

“This initial phase will teach us a lot about how habitat restoration might look throughout the valley,” Troutt said. “Because there are only a few places other than the mainstem of the Nisqually River where chinook spawn, increasing the quality of habitat in those places is important.”

The tribe hopes coho salmon, which return in very small numbers to the Nisqually watershed, will benefit from the restoration. Coho densities tripled after a similar project was completed on the nearby Mashel River.

“Bringing salmon runs back to the Nisqually means restoring and protecting habitat where we can,” Troutt said. “Ohop Creek is a huge opportunity for us to do a lot of good for salmon.”

The Nisqually Indian Tribe is hoping to reverse a decline of the Nisqually River steelhead run.

In the early 90s, the population of Nisqually steelhead declined from 6,000 to fewer than 1,000.

“There’s no quick answer to why the run has fallen so far,” said David Troutt, natural resources director for the tribe. “From what we can tell, steelhead have good habitat in the watershed and they haven’t had much harvest pressure at all.”

The tribal harvest on steelhead closed 20 years ago and sport fishermen stopped fishing them seven years ago.

The next step is to write a new steelhead recovery plan for the Nisqually River.

“This will be an organized and concerted effort to bring back a depressed population of steelhead,” Troutt said.

The Nisqually steelhead plan is one of two recently funded by the Puget Sound Partnership, and the only plan that is being written by a tribe.

“There’s a lot of overlap between steelhead and chinook habitat,” Troutt said. “But there are a couple of places – like Muck and Tanwax creeks – that steelhead depend on that we’ll put more focus on in the plan.”

The tribe isn’t waiting for a finished plan to start working. Last year, the tribe pitched in $400,000 to the Nisqually Land Trust for the purchase of 240 acres of steelhead habitat on the upper Mashel River.

“We know steelhead use that habitat for spawning and rearing; it was important to get it into protected status,” Troutt said.

Since Nisqually steelhead have relatively good freshwater habitat available to them, the reason for the decline likely lies in the marine habitat.

“In order to figure out what’s going on out in Puget Sound, we’re helping fund a broad effort on marine survival,” Troutt said. The Salish Sea Marine Survival project, led by the non-profit group Long Live the Kings, will fund research into marine survival of salmon. – E. O’Connell
Makah Uses Sonar to Count Ozette Sockeye

Military technology is helping the Makah Tribe get a clearer picture of the numbers of threatened Lake Ozette sockeye that return to the Ozette River. The sockeye were listed as “threatened” under the federal Endangered Species Act in 1999 when the run dwindled to a few hundred fish. Fishing for sockeye ceased in the 1970s, but the goal of the Makah Tribe is to see sockeye numbers rebound to harvestable numbers.

To estimate run sizes and assist in research, the tribe has operated a fence-like weir for decades where the Ozette River meets Lake Ozette. The weir guides returning sockeye through an opening where a digital video recorder tracks them. However, the weir can’t be installed in the river during the highest early spring flows when it is believed that some adults return.

“That’s where the DIDSON (dual frequency identification sonar) can give us information we can’t get otherwise,” said Kim Clark, watershed scientist for the Makah Tribe. The sonar is unaffected by high flows or muddy water, reflecting sonar beams back from the fish to show picture-like video. Additional software assists in identifying species. Developed by the military to detect enemy divers and mines, DIDSON has become a reliable tool for observing and counting fish.

The DIDSON is funded by a $105,000 grant from the Pacific Coast Salmon Recovery Fund, as well as the Salmon Recovery Funding Board and the tribe. The device will be installed alongside the weir for two years to assist in data and analysis transition and then likely will replace the weir.

“We have been wanting to do this for a long time,” said Stephanie Peterson-Martin, habitat division manager for Makah Tribe Fisheries Management.

The DIDSON also can be mounted on a boat and used to count fish on beach spawning grounds in the lake during the winter.

“This past winter, we took it out for three surveys and we were able to ‘see’ how deep the fish spawn as well as what may represent a new spawning area,” Martin said. The tribe conducts visual estimates of spawning salmon as well as carcass counts each year.

The tribe also wants to get a more natural look at how predators interact with sockeye.

“While the weir has been there for many years and it’s possible that predators like river otters and northern pikeminnows use this bottleneck that allows them to prey on sockeye more easily,” Martin said. – D. Preston

Blueback for Broodstock

Quinault Indian Nation fisheries technician Jay Thomas pulls a male sockeye from a net on Big River.

The adult fish will be used as broodstock to supplement the population of Quinault sockeye, or blueback, known for their distinctive color.
An unexpectedly low number of juvenile coho salmon out-migrated from Goldsborough Creek last spring, disrupting the Squaxin Island Tribe’s effort to monitor the population.

“We were expecting a relatively healthy run of outgoing coho, somewhere around 55,000 fish,” said Scott Steltzner, biologist for the Squaxin Island Tribe. “But the run was about a third of that. More troubling, the fish were smaller than we expected.”

Because of last year’s low run and small fish, the tribe had a hard time finding yearling candidates for the second year of its acoustic tagging project. The tribe borrowed 25 yearling hatchery coho from the state’s nearby Minter Creek hatchery to tag and release into Goldsborough Creek.

Tiny transmitters implanted into the juvenile coho allow researchers to track the young fish as they make their way out to salt water.

“We’ve used this technology to track coho across deep South Sound, but now we’re taking a closer look at Shelton Harbor,” Steltzner said.

An array of acoustic receivers located along the creek, in Shelton Harbor and all the way out to the Pacific Ocean will track the fish as they begin their migration. Each tagged coho’s individual sonic frequency is picked up when it passes a receiver, and its movements are tracked for several hundred yards.

Last year’s low run was in strong contrast to a recent trend of increasing coho runs in Goldsborough Creek following a dam removal 10 years ago.

“We’ve seen steadily increasing runs since salmon were able to access almost 25 miles of new habitat in the upper watershed,” Steltzner said. “In fact, we expected last spring’s to be one of the largest coho years since the dam came down.”

The coho crash in Goldsborough likely has something to do with a regional decline in coho returns. Throughout southern Puget Sound, coho returns have been much smaller than predicted for the past two years.

Fittingly, the tribe’s acoustic research could point to solutions to the regional coho crash.

“We’re looking for how salmon are surviving in salt water,” Steltzner said. “If the reason for the lack of coho can’t be found in the freshwater environment, seeing how they’re doing farther out in Puget Sound could provide some clues.”

– E. O’Connell
DNA from Elk Scat May Help Track Herd

Wildlife biologists from the Stillaguamish and Tulalip tribes are testing a new way to track the population of the Nooksack elk herd by using the animals’ scat.

This winter, tribal biologists partnered with Western Washington University’s Huxley College of the Environment to determine the most efficient way to collect DNA from elk scat. Genetic material can be found in the intestinal mucus coating the pellets. Biologists sampled fresh scat using toothpicks and cotton swabs, and submitted it to a genetics lab to determine which method is most effective at providing an animal’s unique genotype.

“This is a non-invasive method that does not require collaring animals or helicopter time to survey them,” said Stillaguamish biologist Jennifer Sevigny. “Our preliminary samples were perfect with 100 percent viability for all techniques.”

In the spring, the Stillaguamish and Tulalip tribes plan to coordinate a population survey, sampling elk scat in the North Cascades Mountains, including forested landscapes that are hard to monitor during aerial surveys.

“One individual elk are identified by their DNA, a population estimate can be obtained by resampling an area and comparing the number of originally identified individuals – the marked animals – to the newly identified animals – the unmarked animals,” said Tulalip wildlife manager Mike Sevigny.

During the past two decades, tribal and state co-managers completed numerous habitat restoration projects to improve forage for the Nooksack herd, which had declined to about 300 animals by 2003. According to 2012 aerial surveys, the herd has rebounded to as many as 1,400 elk. – K. Neumeyer

Otters Pop

Elwha River otters check out the lens staring back at them.

The Lower Elwha Klallam Tribe is tagging river otters to study migration patterns as the Elwha and Glines Canyon dams are demolished. So far, the tribe has trapped and tagged five otters.
Tribally caught fish sold at the Lummi Nation’s Schelangen Seafood Market is both locally sourced and sustainable, two of the most sought-after qualities for chefs, according to the National Restaurant Association.

Schelangen, in the Lummi language, means “way of life.”

“Harvesting has always been the cornerstone of our culture,” said Elden Hillaire, chairman of the Lummi Fisheries Commission. “All of our harvest targets healthy stocks while protecting weak wild runs. Fishing sustainably and being able to supply locally caught seafood is important to us.”

Locally sourced meat and seafood is the top trend in the National Restaurant Association’s What’s Hot 2013 survey. Sustainable seafood is ninth on the list. The What’s Hot list was compiled after the association surveyed professional chefs about the food, cuisines and culinary themes that will be popular on restaurant menus this year.

Tribes have been forced in recent years to limit fisheries because of widespread damage to salmon habitat.

“Fortunately, because of careful management, we can still harvest without impacting weak wild runs,” Hillaire said. “In the long term, sustainable harvest and the restoration of salmon habitat are our goals.”

The seafood market is part of the Lummi Gateway Center, off Interstate 5 north of Bellingham. The center is intended to promote community prosperity through tribal enterprise. The nearly 10,000-square-foot shopping center also includes a cafe serving lunch daily and a gift shop featuring Lummi artwork.

In addition, the Lummi Gateway Center has space for seven small businesses to start up. These “incubator” spaces provide an opportunity for tribal members to develop a new business in a prime storefront area. The building itself has been designed to use less energy on a daily basis than a traditionally constructed building, and earned a Leadership in Energy and Environmental Design Silver Certification.

For more information, visit lummigatewaycenter.com. – K. Neumeyer