



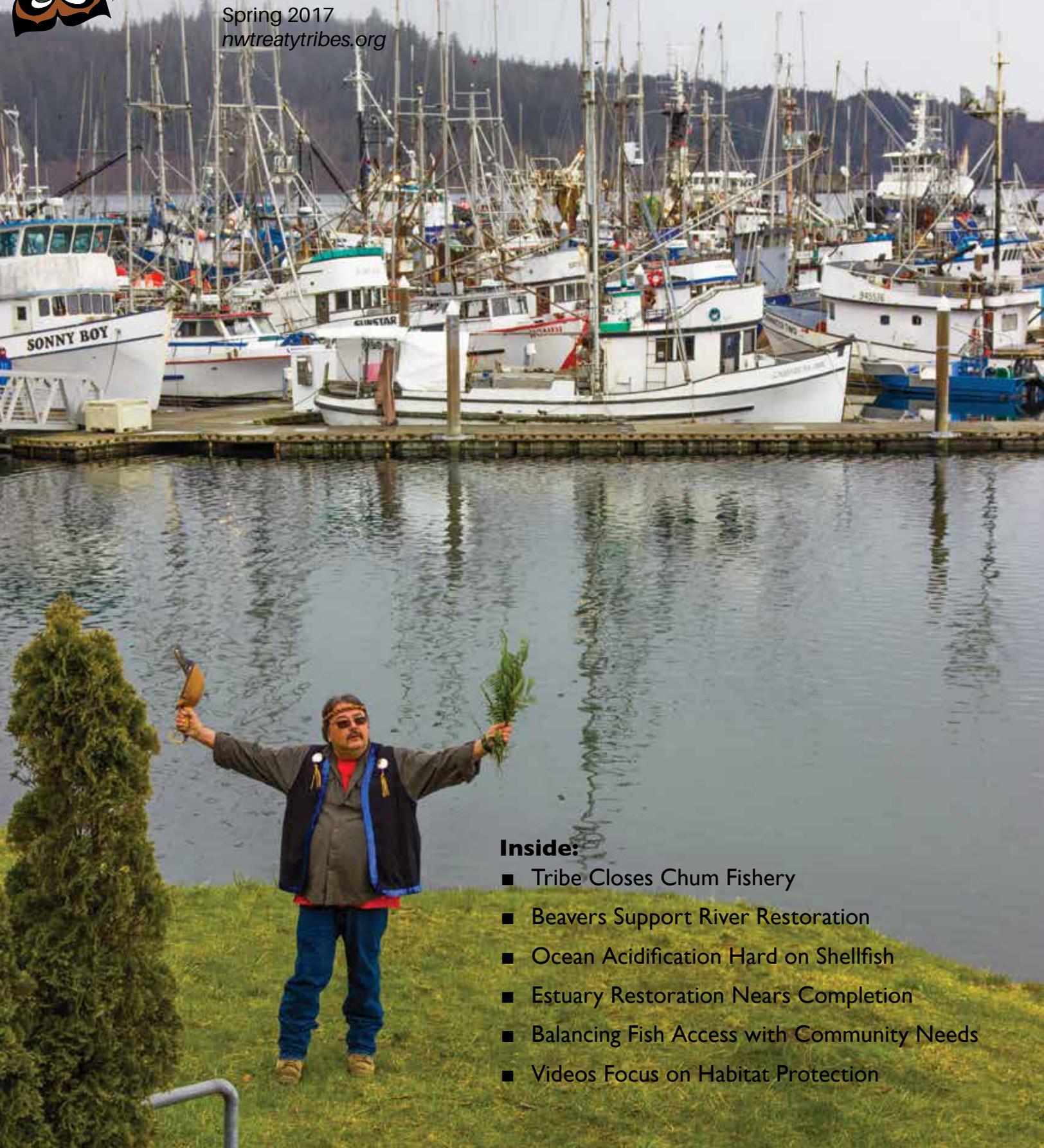
A publication of the Northwest Indian Fisheries Commission

Northwest Treaty Tribes

Protecting Natural Resources for Everyone

Spring 2017

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A More Efficient North of Falcon



by Lorraine Loomis
NWIFC Chair

The 2017 state and tribal salmon season-setting process got an early start this year.

Nobody wants a repeat of last year's North of Falcon process that required a month of overtime negotiations and led to a delay in opening some sport fisheries. It was the first time in more than 30 years that the co-managers were unable to complete the process in the usual late February through April timeframe.

Some said the delay showed that the process is broken. It's not. The fact that we reached an agreement is proof of that. What is true is that salmon management is becoming more difficult every year as the resource continues to disappear.

Poor ocean food supplies, climate change, and the ongoing loss and damage of salmon habitat have led to record low returns of chinook and coho for the past few years. This reality demands increasing caution by the salmon co-managers as we work to share and rebuild a steadily shrinking resource.

More of the same is expected again this year. In fact, we may be seeing a new normal when it comes to salmon returns in western Washington.

We've been working with the state to take a close look at the North of Falcon process and how we can be more efficient.

One thing we did was get the ball rolling earlier this year. We began our preliminary meetings in January so tough issues can be addressed more quickly.

For example, we are addressing species like pink and coho salmon earlier in the process. That gives us extra time to deal with more at-risk species such as Puget Sound chinook, which have continued to decline since being listed as threatened under the Endangered Species Act in 1999.

I am optimistic that we will finish on time and agree on a package of fisheries that balances the needs of all fishermen and the sustainability of the salmon resource.

Still, no fisherman is going to get everything he wants this year. We all want more

fish, but there just aren't enough. So, let's look at what we can do together.

We can do more to protect salmon habitat.

The ongoing loss and damage of salmon habitat is the single biggest source of our problem. The collapse of our fisheries mirrors this destruction of habitat.

We can advocate for hatcheries.

About half the salmon harvested in western Washington are hatchery fish. We will all have to depend on hatcheries for as long as lost and damaged habitat restricts natural salmon production.

The importance of hatcheries should be reflected in their funding, but as the need for hatchery fish has increased, state funding for hatcheries has declined or remained flat. Federal funding for tribal hatcheries also has not kept pace with maintenance and operation costs.

We can continue to cooperate.

It has taken more than 40 years for the tribes and state to build the working relationship needed to jointly manage the salmon resource. Like all relationships, ours has its ups and downs, but at the end of the day, we all want the same thing: healthy, sustainable salmon populations that can support harvest.

Even with an early start it won't be easy for the co-managers to reach agreement again this year. As salmon continue to decline, every management action we take requires increasingly careful consideration.

One thing that's certain is that fisheries management is better when we work together.



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On the cover:

Steve Pendleton, Makah Tribe, leads the annual Blessing of the Fleet at the Makah Marina. Photo: T. Royal

Tribe, Farms Working to Improve Water Quality



K. Neumeyer

A Lummi father and daughter harvest manila clams on Portage Bay in 2011. Harvest has been closed to Portage Bay since 2014 because of bacterial contamination.

About 300 Lummi shellfishers received a portion of a \$450,000 settlement from Whatcom County dairy farmers to compensate for lost opportunities to exercise their treaty right to harvest shellfish.

Lummi shellfish harvesters lost an estimated \$8 million in revenue from 1996 to 2006, when 735 acres of Portage Bay shellfish beds were closed because of bacterial contamination. The beds reopened only to become contaminated again in 2014. More than 820 acres of shellfish beds remain closed.

The settlement is part of the Portage Bay Partnership, a historic agreement among the Lummi Nation and seven Whatcom County dairy farms to improve water quality in the Nooksack River basin.

The partnership was announced in January following more than 15 months of talks. Eventually it should lead to judicially enforceable agreements to improve water quality and reopen the shellfish beds.

“We want to work together to protect water for all and to return it to the productive state it once was,”

said Timothy Ballew II, chairman of the Lummi Indian Business Council. “The Portage Bay Partnership is an opportunity for the Lummi to safeguard our harvesting communities by working with farmers to address all sources of water contamination.”

The settlement also includes \$500,000 for enhancements and \$150,000 for enforcement and consultants.

One of the main causes of the bacterial contamination is manure from dairy cows discharged either directly or indirectly into the Nooksack River, which flows into Portage Bay. 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, according to the Resource Conservation and Recovery Act.

The Portage Bay Partnership also aims to develop a water quality improvement plan addressing manure management, improved manure storage, surface and groundwater

monitoring, annual animal pen inspections and underground drain tile inspections.

“While this first step involves a number of actions aimed at addressing water contamination, we believe the most important element is the beginning of a more positive, constructive and beneficial working relationship between the farmers and the Lummi Nation,” said Rich Appel, a dairy farmer and member of the team that developed the partnership.

Plans for the first two of the seven Whatcom County farms are expected to be finalized by May. If the efforts at Edaleen Dairy and Twin Brook Creamery are successful, plans will be developed for the others.

“Farms are not wholly responsible for the contamination, but the farms that have joined the partnership are stepping forward as leaders in fixing it, and we hope others will follow their example,” said Merle Jefferson, executive director of the Lummi Natural Resources Department.

– K. Neumeyer

“The Portage Bay Partnership is an opportunity for the Lummi to safeguard our harvesting communities by working with farmers to address all sources of water contamination.”

– Timothy Ballew II
Chairman, Lummi Indian Business Council

Moon Honored With First Billy Frank Jr. Award

Longtime NWIFC commissioner Mel Moon was the first recipient of the Billy Frank Jr. Leadership Award on March 9.

The award recognizes Moon for his high degree of initiative, commitment, leadership and accomplishment in the advancement, protection and recognition of tribal sovereignty, treaty-reserved rights and natural resources in western Washington.

As director of Quileute Natural Resources since 1982, Moon has not only been the department administrator, but also serves as a natural resources policy representative.

Over the years, as the tribe's programs expanded from

fisheries to include hunting and gathering, Moon kept pace while protecting and advocating for treaty rights.

He has been actively involved in regional, state and national forums that address policy and legal issues regarding environment and natural resources. These include the Pacific Fishery Management Council, North of Falcon, Pacific Salmon Commission, International Pacific Halibut Commission, and a number of intergovernmental meetings on treaty hunting and gathering.

He currently serves on the Olympic Coast National Marine Sanctuary Adviso-

ry Committee. He also has worked closely with expert anthropologists to assure the Quileute have a strong record of cultural use of resources.

Based on these years of knowledge related to so many treaty issues, Moon has been named an expert witness in a number of *U.S. v. Washington* cases, including matters regarding shellfish, steelhead, salmon, halibut, black cod, and usual and accustomed area determinations.

He also has taken a special interest in supporting canoe journeys and any other events he can participate in as time permits. – K. Neumeyer



NWIFC file photo

Mel Moon



T. Meyer

Above: NWIFC chair Lorraine Loomis, right, and Willie Frank III present the Billy Frank Jr. Leadership Award to Mel Moon and his wife, Donna. The award was given as part of Billy Frank Jr. Day festivities hosted by the Stillaguamish Tribe. Right: Stillaguamish tribal staff plant trees behind the tribal natural resources building to commemorate Billy Frank Jr. Day.

Billy Frank Jr. Day was created two years ago to celebrate Billy's life and support the advocacy and education efforts of Salmon Defense, a nonprofit organization established in 2003 by the treaty tribes in western Washington. Salmon Defense is dedicated to protecting and restoring salmon and their habitat by increasing public awareness and education, and supporting legal actions to turn the tide on salmon habitat degradation.



K. Neumeyer

No Winter Chum Fishery for Nisqually Tribe

The Nisqually Tribe did not open a winter chum fishery this season so they could protect a weak return.

The tribal fishery typically runs from late November to mid-January. In the face of ever-decreasing returns, the tribe has fished the entire season only once in the last seven years.

“Winter chum has historically been the most important stock, culturally and economically, to the Nisqually Tribe,” said Farron McCloud, tribal chairman. “We want to make sure enough salmon make it up the river to spawn.”

Tribal staff are conducting land and boat-based surveys of marine mammals to measure how much salmon they eat.

“From what we’ve seen so far, we’re estimating that up to a third of the chum run is eaten before they enter the river,” said David Troutt, the tribe’s natural resources director.

In the meantime, the only management choice left for the tribe was to not open their commercial chum fishery. This year’s projected run size was just a couple of thousand more than the escapement needs of 27,000.

“The margin of error was just too small,” McCloud said. “Like Chief Leschi always said, these resources belong to the Creator. We’re here to take care of them.”

“The Nisqually winter chum run is unique in the Puget Sound in a number of ways, including that it is an entirely wild run,” Troutt said. “If enough fish don’t make it to the spawning grounds, there won’t be harvestable runs in the future.”

Tribal fisheries managers suspect that an increasing number of seals and sea lions in southern Puget Sound may be having a significant effect on the winter chum run. The tribe has been studying the impacts of the local marine mammal population on winter chum for two years.

Up until seven years ago, Steller sea lions were listed under the federal Endangered Species Act. They are now considered recovered under the federal law.

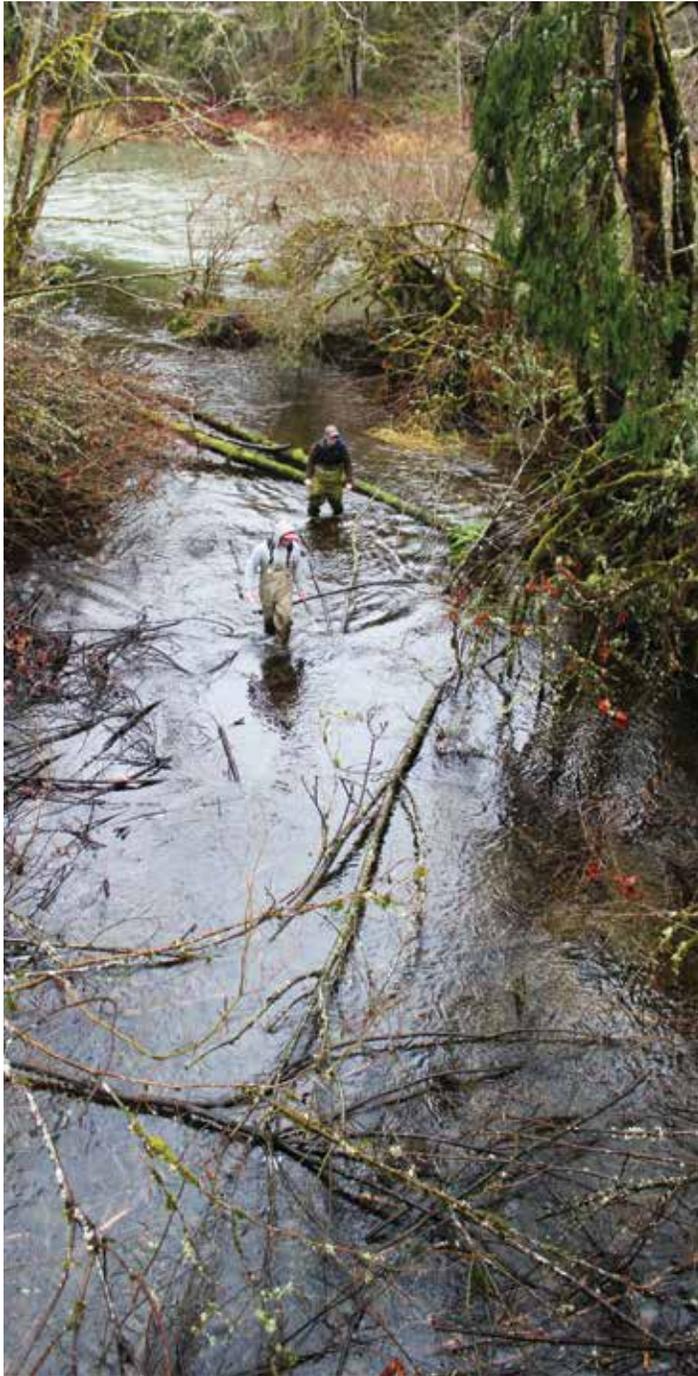
“Sea lion populations have been steadily recovering in Puget Sound since the late 1980s, to the point now we’re seeing very healthy populations,” Troutt said.

Sea lions eat a wide variety of prey (including salmon, steelhead, pollock and herring) depending on what is available at any given time or place. However, it has been discovered that portions of the sea lion population specialize in different prey such as adult winter chum and steelhead.

“In a way, this problem we’re having with sea lions is at least a compliment to us here in the Nisqually,” Troutt said. “The wild chum run here is healthy, which means it has good habitat to return to spawn and rear. We’ve worked hard to make sure this run is strong.

“Unfortunately, the people who should get the most credit for the health of these fish aren’t able to enjoy it this year.”

– E. O’Connell



E. O’Connell

Nisqually Tribe spawning surveyors Tom Friedrich and Craig Smith walk Yelm Creek looking for chum salmon.

“Winter chum has historically been the most important stock, culturally and economically, to the Nisqually Tribe. We want to make sure enough salmon make it up the river to spawn.”

– Farron McCloud,
Chairman, Nisqually Tribe

Beaver Work Supports Salmon Habitat in Elwha

Looking for beaver activity in the expansive Elwha River valley is daunting. But the key is to keep eyes on the ground, looking for any signs – foot tracks, scat, tail drag, beaver dams, pencil-sharp tree stumps and wood shavings.

The Lower Elwha Kallam Tribe wildlife staff heads out daily for a week or two in the winter to bushwhack through thick cottonwood and willow trees to find any of these signs in the former lakebeds of Aldwell and Mills, where the Elwha River now runs.

The work is part of the tribe's bigger study on how wildlife is using the lakebeds since the river's two fish-blocking dams were removed between 2011 and 2014. The idea is that the beavers' tree-cutting and dam-building activities will potentially alter the river's flow and create pools important for coho salmon fry habitat.

"Our big interest is documenting if and how beaver are recolonizing these habitats that were formally inundated with water," said Kim Sager-Fradkin, the tribe's wildlife program manager.

"We know from previous studies that beavers are most commonly found at the mouth of the river, where they are able to build dams in the estuary," she said. "In the mainstem of the Elwha, because the river is so big, they are generally bank dwellers. But we feel like there is a possibility that in these new floodplain habitats created by dam removal and the emptying of the reservoirs, they may end up building dams to block side-channel habitat."

A consistent sign of beaver activity this winter has been willow and cottonwood tree stumps, cut either into the shape of a sharpened pencil or at a sharp angle, with small teeth marks.

Staff take note of each stump, including where it is located, what kind of tree cover and sediment surrounds it, how close it is to the river, and how many other cut stumps are within a few meters of it, indicating the types of habitat used by beavers and the intensity of that use.

"Beavers are frequently considered ecosystem engineers," Sager-Fradkin said. "Their habit of cutting down trees to build dams helps with restoring areas in need of better salmon habitat."

– T. Royal



Above: Lower Elwha Klallam wildlife technician Cameron Macias, left, and wildlife management biologist Kim Sager-Fradkin observe branch near a tree stump cut by a beaver. The tribe is studying how beavers are using the newly restored Elwha River following the recent removal of two fish-blocking dams. Right: A beaver-cut stem.



T. Royal (2)

Chinook Redd Numbers Increase Beyond Old Dam Sites

In the five years since the Elwha River's fish-blocking dams were removed, the Lower Elwha Klallam Tribe has been documenting where chinook salmon spawn in the watershed as they gain access to more spawning habitat.

The tribe's habitat and fish biologists, with its state and federal partners, have been annually surveying the river in mid-September during the peak of the chinook spawning season. The survey area extends nearly 20 miles, from the river mouth to past Glines Canyon. Surveyors walk the river banks, counting redds (salmon egg nests) and live and spawned-out salmon.

Determining the number of redds in the

river is a good indicator that adult salmon are using newly available spawning habitat, said Mike McHenry, the tribe's habitat program manager.

"The increase in salmon redds speaks to the benefits of dam removal," he said. "Salmon are finding spawning habitat between the two former dam sites that hadn't been touched by salmon in a century, plus they are getting deeper into the watershed every year. They spawned in significant numbers above the former Glines Canyon Dam site for the first time in 2016, with 58 redds found."

The most obvious trend between 2012-2016 was an increasing number of nests upstream from both former dam sites. Be-

fore dam removal, salmon only had access to the lower five miles of the river.

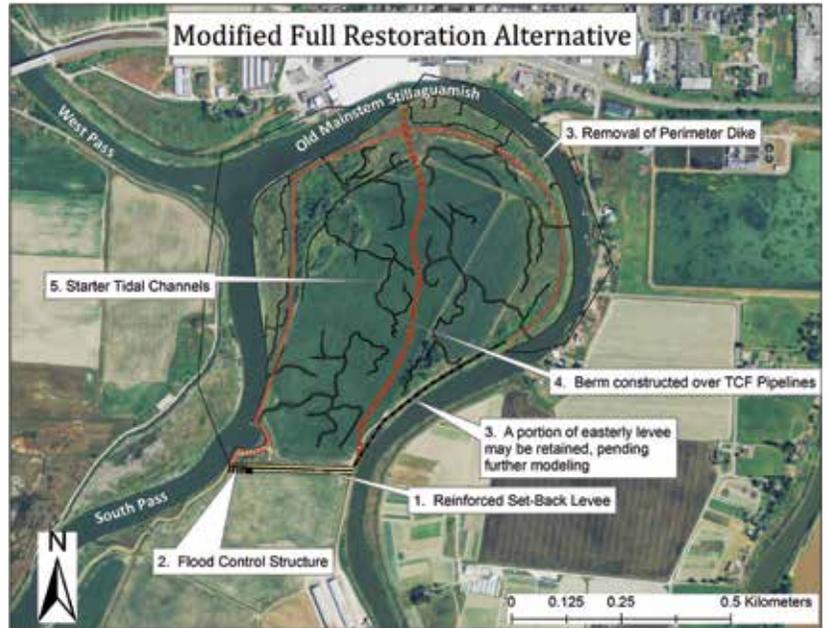
There also was an increasing number of redds in the mainstem, suggesting that habitat is improving and stabilizing in the mainstem, McHenry said.

While there were fewer returning adults in 2016 than in previous years, the distribution of redds through the survey area was the greatest.

"Even though there were fewer redds, they were spread out further throughout the river valley, suggesting that passage conditions for salmon were much improved in 2016 versus previous years," McHenry said. – T. Royal



Jason Griffith, Stillaguamish Tribe



Stillaguamish Tribe

Left: Andrew Zeiders, Stillaguamish Tribe restoration crew lead, left, and Stillaguamish biologist Jody Brown sample fish outside the dikes at *zis a ba*. Above: The tribe plans to excavate tidal channels and remove the levee to allow the river and tides to inundate the land.

Creating a Healthier Floodplain for *zis a ba* Wetlands

The Stillaguamish Tribe is reconnecting 88 acres of coastal wetlands to tidal influence, while also protecting the surrounding farmland.

“Just like agriculture, we are in the food business, except our crops are fish, wild-life and culturally important plants,” said tribal Chairman Shawn Yanity.

In 2012, the tribe purchased the property along the Stillaguamish River and named it *zis a ba*, after a former tribal chief. Formerly part of Port Susan, the estuary was isolated from the floodplain by a dike built more than 100 years ago to prevent flooding.

“We’ve learned through experience, however, that a healthy floodplain is best for protecting lives, homes and property from flooding,” said Stillaguamish fisheries biologist Jason Griffith. “It’s also good for fish.”

The project will encourage increased

habitat complexity by establishing 4.5 acres and 3 miles of tidal channels by 2025. This will provide estuary rearing habitat for juvenile salmon, especially Stillaguamish and Skagit chinook populations that are protected under the Endangered Species Act.

Chinook runs in the Stillaguamish have fallen to as few as 600 fish returning to spawn in the last couple of years. Historically, an estimated 30,000 to 40,000 adult chinook returned to the river, compared to an average of about 1,000 between 2005 and 2014.

The tribe has received National Coastal Wetlands Conservation and Salmon Recovery Fund Board grants to remove most of the current dike and build a setback levee to protect surrounding property owners.

“The restoration work and setback levee will improve habitat and water quality

by allowing the estuary to function more naturally,” Griffith said. “It will bring Puget Sound and the Stillaguamish River together again in this area.”

Among the infrastructure the design aims to protect is a vegetable waste transmission pipeline that runs through the area from the nearby frozen food processor Twin City Foods.

“The new setback levee will incorporate flood relief structures that ensure that project provides equal or greater flood protection for surrounding property owners, when compared to baseline conditions,” Griffith said.

The *zis a ba* project is part of the Puget Sound Partnership Action Agenda to restore estuarine wetlands to tidal flooding. The 88 acres constitutes about 20 percent of 10-year salmon recovery goal for the Stillaguamish River. – K. Neumeyer

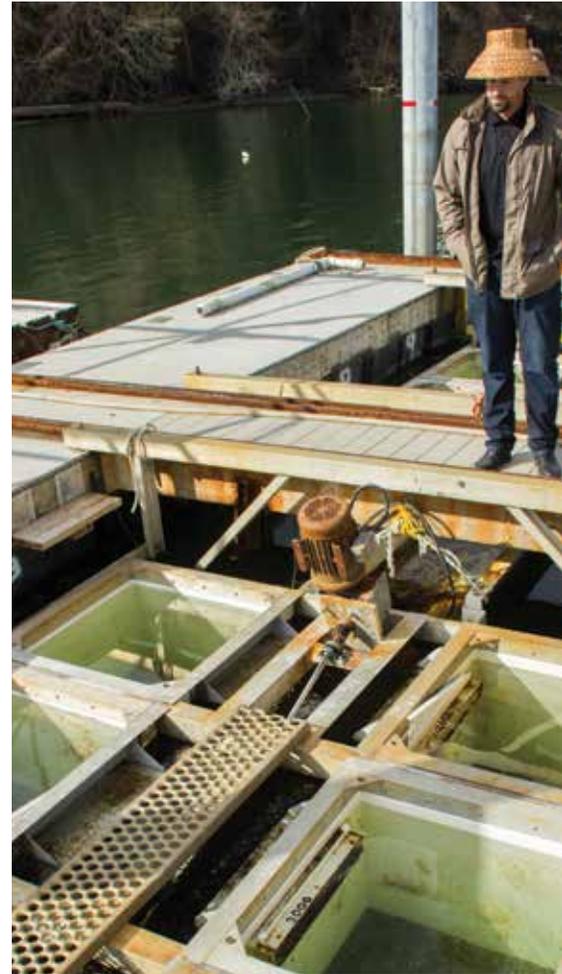
Enhancement Programs Provide More Shellfish

Tribes use Floating Upwelling Systems to support shellfish enhancement programs.



E. O'Connell (2)

Above: Squaxin Island Tribe shellfish biologist Alyssa Houed inspects the tribe's new algae production system. Right: Tyler Johns, the tribe's shellfish operations manager, stands on the tribe's new floating upwelling system, a clam nursery.



Squaxin Island Expands Tideland Acreage

The Squaxin Island Tribe recently purchased 15 acres of tidelands, further stabilizing its shellfish-based economy.

"These new tidelands and aquaculture infrastructure will give us more options in terms of how we enhance tidelands for the benefit of tribal harvesters," said Tyler Johns, the tribe's shellfish operations manager.

The tidelands are part of a larger shellfish operation that also includes a shellfish nursery and an algae greenhouse.

A few years ago, the tribe built its own floating upwelling system (FLUPSY), a type of clam and oyster nursery situated in a boat house along the Shelton waterfront. A recently purchased second FLUPSY will allow the tribe to raise even more shellfish to enhance beaches.

The tribe will use the 20,000-liter capacity algae greenhouse to grow food for juvenile clams and oysters.

"Juvenile shellfish at different sizes require different food," Johns said. "By bringing more of the shellfish process in-house, we make our efforts more self-sustainable."

Over the last few years, the tribe has planted tens of millions of clams throughout deep South Sound.

In the last century, the tribe has lost access to shellfish populations due to privatization of tidelands, development and pollution.

"We've seen a huge reduction in harvestable populations of shellfish, and the main factor is the loss of access to tidelands," said Andy Whitener, natural resources director for the tribe.

"The best shellfishing areas were sold to private shellfish growers decades ago. This made them off limits to the tribe or very complicated for our harvesters to access them," Whitener said. "So, we're making

the most of the tidelands we have access to by enhancing the natural populations already there."

More than 30 percent of the nearly 1,100 Squaxin Island tribal members are active shellfish harvesters.

"We've been harvesting shellfish forever," Whitener said. "We have always counted on shellfish as a source of food and trade. We will do everything we can to protect the health of the shellfish resource and our treaty-protected right to harvest." – E. O'Connell

For Tribes, Economy

Jamestown Hatcheries Address Oyster Restoration Efforts

Ocean conditions have the Jamestown S’Klallam Tribe concerned about shellfish survival rates and treaty harvesting rights.

“Tribes aren’t able to harvest oysters like they once did,” said Kurt Grinnell, Jamestown council member. “We just don’t get the natural shellfish recruitment like we used to.”

To address these concerns, the tribe has started its own shellfish hatcheries at Point Whitney in Brinnon and Kona, Hawaii. The tribe also has two large shellfish nurseries called floating upwelling systems (FLUPSYs) at the John Wayne Marina in Sequim. Currently, the program provides locally grown oyster seed for restoration efforts on area beaches, as well as for purchase by shellfish growers. Income from this program goes back into tribal programs.

Grinnell and Jamestown shellfish biologist Ralph Riccio point to several factors when it comes to shellfish survival rates, ranking ocean acidification as the top concern.

“The major take-home is that larval shellfish can’t make it,” Riccio said. “Ocean acidification is making it hard for the tiny organisms to make it through the most important stage of their life. They can eat as much algae as they can, but with current ocean conditions, such as the decreasing pH of the water, they cannot eat enough to get the energy they need to grow their shell and increase body mass.

“Ocean conditions are affecting the shellfish industry as a whole, and thus going to affect the tribal members’ ability to harvest and exercise their treaty rights.”

The decision to start the Kona hatchery addressed the ocean acidification concerns. The ocean chemistry in Hawaii provides better water quality conditions needed for larval survival than in Washington where the water can be more acidic.

“In Hawaii, you can get a 10-15 percent success survival rate whereas here, it’s maybe a couple percent,” Grinnell said. “Again, our water conditions in Washington state just aren’t what they used to be to support the shellfish life cycle.”

Adult oysters from Oregon State University’s Molluscan Broodstock Program are used in Kona to produce oyster larvae.

The oyster larvae then are shipped to the Point Whitney hatchery and the FLUPSYs for growout. The tribe’s FLUPSYs can hold 12 to 18 million oyster seed.

The hatcheries and FLUPSYs are providing the best conditions possible for shellfish to survive during their early growth stages, Grinnell said.

“It’s not easy work. I hear from elders about not getting enough seafood from the tribe. Our intertidal shellfish are suffering but we are working on it.” – T. Royal



T. Royal

Jamestown FLUPSY technician Nick Rawley pulls a bucket of oyster seed from a FLUPSY bin held by Jamestown shellfish biologist Ralph Riccio at the tribe’s facility in Sequim.

GENERATIONS



Jamestown S’Klallam Tribe Library

Jamestown S’Klallam tribal member Hannah Johnson cleans crab on the beach at Jamestown in the mid-1900s.



Scott Morris, Sauk-Suiattle Tribe

From left, USGS hydrologist Scott Anderson and hydrologic technicians James Foreman and Cameron Marshall mark points on Glacier Peak to be photographed from the air.

Glacial Sediment Movement Concerns Tribe

The Sauk-Suiattle Tribe is monitoring the amount of sediment moving through the watershed as glaciers recede.

“The tribe is concerned that global warming is exacerbating the amount and timing of this sediment by exposing steep, loose material in the late summer – prime salmon spawning season,” said Scott Morris, the tribe’s water quality coordinator.

A main source of suspended sediment is Glacier Peak. The tribe has access to high-resolution Long Distance and Ranging (LIDAR) images taken by the U.S. Geological Survey (USGS) in 2014 and 2015. But LIDAR, which surveys topography with an airborne laser, is expensive.

The Sauk-Suiattle Tribe is using a newer, less-expensive technique called photogrammetry. Last summer, Morris and three USGS hydrologists took GPS measurements

in the floodplain and up to 7,000 feet on Glacier Peak, marking the spots with bright rocks and logs that could be spotted from the air.

Photographs were taken during a brief flight with a high-resolution camera along the upper Suiattle River corridor, as well as the upper reaches of Chocolate Creek and Dusty Creek and the proglacial zone in between those two creeks on the flank of the volcano.

“The images can be superimposed onto the original LIDAR to highlight areas that either have accumulated bedload or lost bedload,” Morris said.

They plan to repeat the survey in 2019, pending funding. The data will complement an ongoing partnership with USGS to measure the timing and magnitude of suspended sediment in the Sauk, Suiattle and White Chuck rivers.

“The aerial photography helps us understand how bedload is moving in the uppermost reaches of the watershed, which would be difficult to measure by more conventional methods given the remote, rugged location,” Morris said.

Farther downstream, tribal and USGS staff are building on an earlier study by measuring the sediment contributions from smaller sub-basins in the Suiattle watershed to examine the influence of land use and other, natural factors.

The crew set up automated water samplers, flow instruments and continuous turbidity sensors on the mainstem Suiattle and Downey Creek, which features an important chinook spawning reach. Field crews also are collecting suspended sediment samples and flow during storms. – *K. Neumeyer*

Skagit River Project Balances Fish Access with Neighbor Concerns

While it will still be a few years before any restoration work begins in Barnaby Slough, the Skagit River System Cooperative (SRSC) is alleviating neighbors' concerns about the project's potential impacts.

Some landowners in the Martin Road area of eastern Skagit County were initially critical of a proposal to reconnect the Skagit River with Barnaby Slough, fearing the restoration would flood their properties. SRSC hired a professional facilitator and has spent the past year meeting with stakeholders and revising the project goals to include community interests.

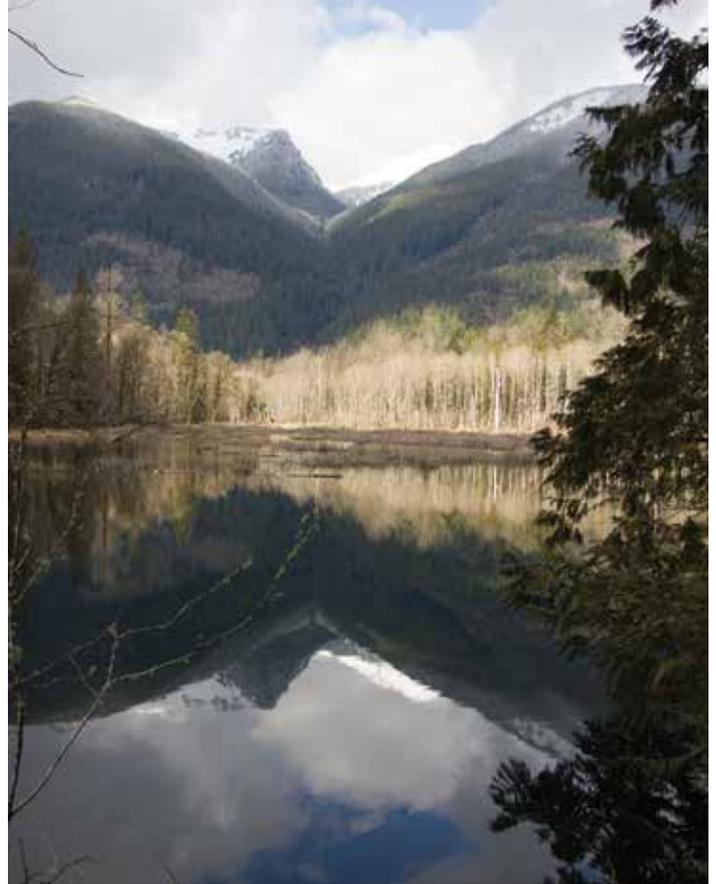
"We're taking a step back and looking at existing conditions," said Devin Smith, project manager for SRSC, the natural resources extension of the Swinomish and Sauk-Suiattle tribes. "We're not at the point where we're going to decide on the alternatives. First we have to make sure everyone approves of the tools."

SRSC has recently hired

consultants from Natural Systems Design (NSD) to improve hydraulic modeling and evaluate existing sediment transport, flooding and channel migration risks. A separate technical review is being conducted by an independent technical advisory committee consisting of Northwest Hydraulic Consultants and representatives from Washington State Department of Transportation and the National Park Service.

After a meeting in January, one of the concerned residents, Dave Hallock, posted positive feedback to his website, Skagit Upriver Neighbors.

"The NSD representatives shared examples of similar work they've done elsewhere and I was impressed by the evident creativity of their efforts to accomplish improved fish habitat while doing nothing to put area homes and properties at risk," Hallock wrote. "This is an ethical standpoint that I value very much – dedication to providing specific professional science services in sup-



K. Neumeyer (2)

port of focused projects while also respecting the potentially conflicted rights and values of people living and working in the project area."

A field trip for stakeholders is planned for April.

"The project team feels like we've crossed a milestone of trust with the community," Smith said.

The Barnaby reach extends from Illabot Creek down-

stream to the Sauk River near Rockport. The project area includes 300 acres of aquatic habitat, where 11 known barriers block fish access to nearly 80 acres, plus a mile of tributary streams.

"There is tremendous opportunity for restoration in the Barnaby floodplain and we want to develop a project that has substantial increases in fish habitat and also benefits the community," Smith said.

The property houses the obsolete infrastructure of a defunct hatchery, and is owned by The Nature Conservancy, state Department of Fish and Wildlife, and Seattle City Light. These organizations are participating in a project steering committee that makes decisions about the project.

– K. Neumeyer



Above: Harrison Pond was created as part of a now-defunct hatchery. Project managers plan to remove the old hatchery structures. Left: Devin Smith of SRSC describes how beaver dams at the downstream end of the project block salmon access.

Skokomish Estuary Restoration Nears Completion

The Skokomish Tribe is wrapping up a significant restoration of the Skokomish Estuary and will now watch how Mother Nature responds to the work.

The past decade has been filled with dirt-pushing, tide gate-removing, culvert-replacing, wood-installing, beach-seining, vegetation-measuring and channel-digging work, restoring 1,000 acres of farmland back into an estuary historically used by the tribe before the 1900s.

It started in 2007 with the removal of a mile-long dike parallel to *Kwakwachalko* (formerly known as Nalley Slough, named for the former property owner), to allow natural tidal flow into the estuary, recreating natural fish habitat adjacent to the Skokomish River.

The dike, built in the early 1940s, had prevented tidal flow, eliminating important juvenile salmon rearing habitat. The adjacent Skokomish River supports Hood Canal summer chum and Puget Sound chinook salmon, both listed as threatened under the federal Endangered Species Act.

The tribe installed a raised concrete boardwalk to allow tribal members easy access to the estuary and tidelands for harvesting traditional plants and shellfish. It also lets the tides and floods flow freely onto the floodplain.

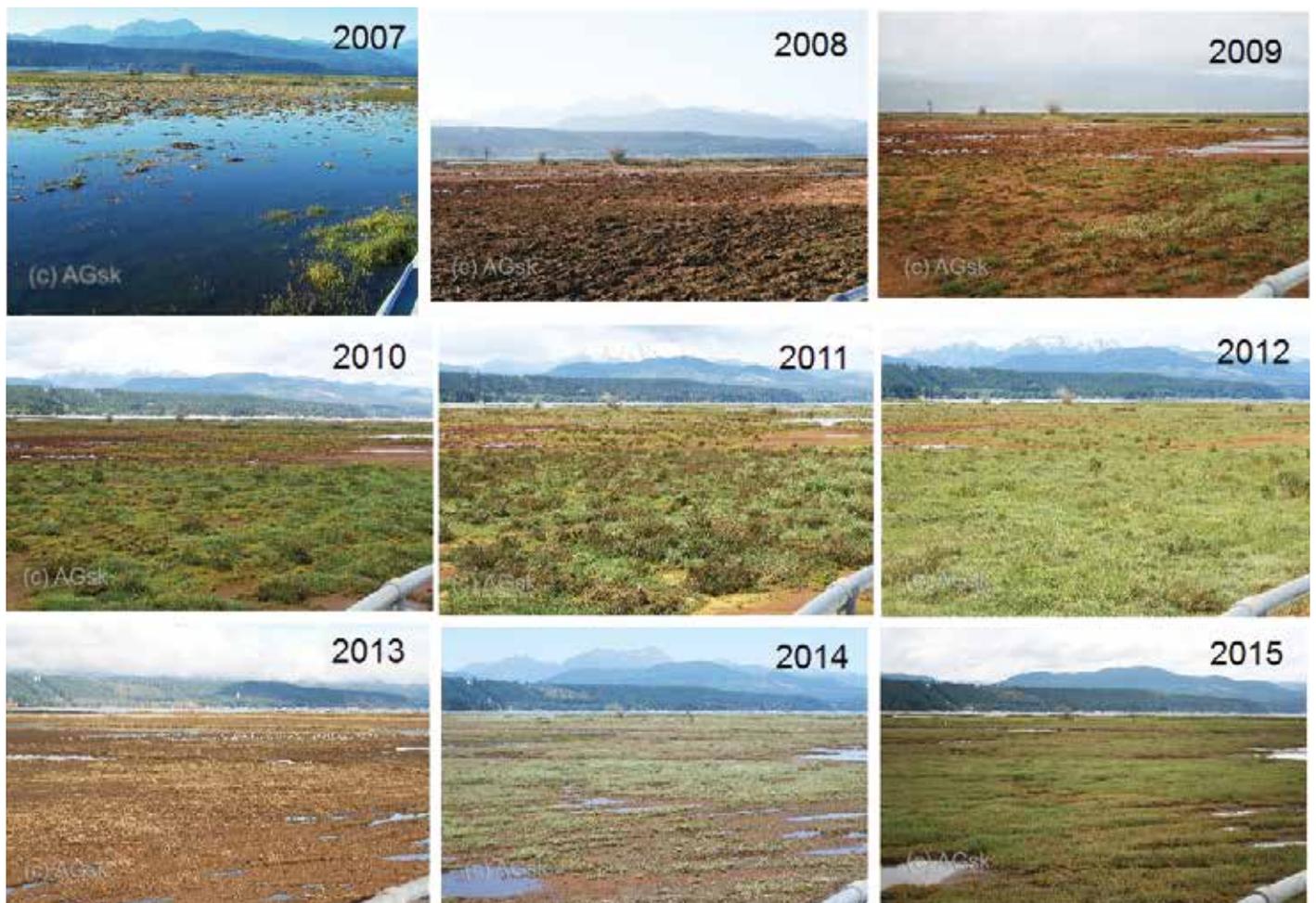
In 2010, the tribe started work east of the boardwalk on *Sweeplachub* (formerly known as Nalley Island) by removing the dikes and culverts that made up the island, allowing historic

channels to flow freely again.

In 2012, the tribe used aerial photos from 1938 to find more historic channels that were at the mouth of the river, and placed more than 250 rootwads and logs to help recreate those channels. By this point, about 350 acres and 20 miles of stream channel length had been restored.

The final phase of the work connected freshwater wetlands to the estuary, including construction of multiple bridges and installation of large culverts, plus recreating more historic channels.

“Opening the salt marsh and floodplain to the river and tide cycles is key to restoring the estuary and its habitat,” said Alex



Alex Gouley, Skokomish Tribe

This photo time lapse of the Skokomish Estuary shows how vegetation has naturally filled in since the first dikes were removed in 2007. The 2013 photo shows vegetation disturbance from heavy equipment use that summer.

Completion

Gouley, the tribe's habitat program manager.

The tribe's natural resources departments have been monitoring the changes for the past decade. Fish biologists and technicians are counting out-migrating smolts using the newly recreated channels year-round. Within the first year, staff found 20 fish species, including chinook, chum and coho salmon, in areas where no fish had been seen before.

"We found the same fish species in the restored areas that were only previously found in areas that had not been diked or graded," said Anthony Battista, a tribal fisheries technician.

In addition, the tribe is collecting data on sediment accumulation and salinity in the estuary's soils.

"Since vegetation is a key indicator of restoration success, it is important to monitor the salinity and elevation of sediment so we can predict possible impacts, such as saltwater intrusion," said Lisa Belleveau, the tribe's habitat biologist.

The shellfish staff has been monitoring how the tideland conditions have changed for shellfish habitat.

"It appears that the return of more natural hydrodynamics has resulted in scouring of some of the tidelands and deposition of larger grain sizes, leading to improved sediment for shellfish habitat," said Chris Eardley, the tribe's shellfish management biologist.

Much of the hands-on work is finished.

"Now we're in adaptive management mode," Gouley said. "We're monitoring how the estuary is taking to the work we've done and if we need to do any modifications. But we'll never stop making sure it's the healthiest it can be for the fish, shellfish and wildlife that use it, as well as for our tribal members."

- T. Royal



Lisa Belleveau, the tribe's habitat biologist, measures the depth of sediment accrued in the estuary. Native vegetation and sediment levels have flourished since the estuary was reopened to tidal flow.

Skokomish Estuary, by the numbers:

- 517 acres opened to tides by altering or removing culverts, tide gates, berms and dikes.
- 3.5 miles of dikes removed.
- 48 culverts modified or removed for fish passage.
- 5,038 yards of stream channels modified or created.
- 561 acres of forested wetland complex reconnected.
- 100+ pounds of Japanese oyster drills removed.
- 18 million seed oysters planted.
- 150,000 seed clams planted.



T. Royal (3)

Left: Skokomish Tribe habitat program manager Alex Gouley, left, and natural resources director Joseph Pavel check out a newly installed culvert in the estuary during a tide cycle. Right: The tribe's fisheries staff regularly seine channels in the estuary to determine which fish species are using them as they migrate to and from Hood Canal.

Man in Iconic Photo Recalls Fish-In Arrest

Hundreds of tribal members camped along the banks of the lower Puyallup River during the summer of 1970. They were part of the largest fish-in protest up to that point and were part of the effort to reaffirm the treaty tribes' right to harvest salmon.

The fish-in ended with a police raid, captured in an iconic photo of a 17-year-old boy being detained by an officer in riot gear.

That boy, Michael Hunt of the Confederated Tribes of the Umatilla Reservation, recently visited the Northwest Indian Fisheries Commission offices in Olympia and recounted his memories of that summer.

He had grown up in Tacoma, but by 1970 had moved back to Oregon.

"I went to school there, I still had friends and family in Tacoma," Hunt said. "When I heard about the Puyallup encampment, I knew where I wanted to be."

Throughout the summer, Hunt remembers ferrying members of the encampment back and forth between the river and his family's house for showers and rest.

The fish camp was on a small parcel that was still owned by the Puyallup Tribe of Indians after most of their former reservation had been allotted and sold off to non-tribal property owners.

In early September, the state Department of Game, backed up by the Tacoma Police, moved in to break up the camp.

Two game officers tried to take a net out of the water, which set off a scuffle. Protesters burned a railroad bridge over the river, and police fired tear gas into the crowd. Sixty people, including Hunt, were arrested.

"When things started to happen, I became confused and highly anxious to pretty much get away from it all," Hunt said. As he began moving through the tear gas, he was hit in the belly by a canister.

"I thought I'd been shot with a shotgun and that I was going to be dead," he said. "In the confusion I attempted to move away from that area, and was grabbed a hold of by a police officer."



E. O'Connell

Above: Michael Hunt, Confederated Tribes of the Umatilla Reservation, shares the story of his arrest during the Puyallup River fish-in during the summer of 1970. Below: A photo of Hunt being arrested became one of the iconic images of the Indian Fish Wars.



Hunt said the officer was surprisingly nice.

"He was a rather concerned officer, (he) lightly maced me in the face and then led me away," Hunt said. "(The officer said) 'come on, let's go this way, we need to get away from here.' He was being teargassed just as much as anyone else in the immediate area."

The raid had an immediate impact; the federal government sued the state of Washington less than a week later over treaty rights violations. That case would eventually result in the Boldt decision, which reaffirmed the tribe's right to half the harvestable salmon.

Hunt himself would continue working on behalf of tribes and indigenous

peoples. He took part in the 1972 occupation of the Bureau of Indian Affairs in Washington, D.C., and traveled to Central America in the 1980s.

The meaning of the Puyallup raid didn't sink in for Hunt until much later.

"It was a quite a memorable event in my life, and I never realized until years later the significance of this incident in relation to the Boldt decision and treaty rights fishing throughout the whole Pacific Northwest," he said. "I'm proud and honored to have been involved."

– E. O'Connell

Watch Hunt speak about that day:
nwtt.co/boyinthephoto

Fred Fulton Jr.



Fred "Brown" Fulton Jr. was put to rest Dec. 15, 2016 in the Port Gamble S'Klallam tribal cemetery.

He was born to Fred Fulton Sr. and June Froese on June 12, 1955, in Bremerton, and lived in or near the Port Gamble S'Klallam Reservation his entire life. He graduated from North Kitsap High

School. He worked as a commercial fisherman and enjoyed bow hunting, clam baking and cooking fish.

Fulton worked with the tribe's anthropologist Josh Wisniewski to document hunting and fishing locations for the tribe.

After nearly 30 hours of interviews and in the form of nearly 30 maps, Wisniewski and Fulton had "meticulously and painstakingly" mapped out Fulton's living history in a map biography.

"Brown was born in a period wherein he was able to learn first-hand from elders whose own knowledge and experiences extended back into the late 1800s," Wisniewski said. "Brown's interest in traditional foods, and practicing his treaty rights over his lifetime resulted in him being a critical conduit for the passage of traditional knowledge and practices from the generations preceding Brown to those following him."

Fulton is survived by his mother June Froese; stepmother Mary Fulton; children Hemeh Alexis, Monica Fulton and Aaron Newman; siblings Debra Carpenter, Brenda Seachord, Carrie Callihoo, Curt Fulton, Jamie Aikman, Beed Fulton, Merrilee Miguel and Patricia Johnson; and grandchildren Logan Charles and Mikah Charles.

He was preceded in death by his grandmother Angeline Fulton; father Fred Fulton Sr.; stepfather James Fulton; siblings Corinna Fulton and Daryl Fulton; son Baby Fred; and brother Baby Kevin.

Randy James Kinley Sr.



Longtime treaty rights advocate Randy James Kinley Sr. of the Lummi Nation passed away Feb. 24.

Born Feb. 9, 1951, Kinley was well-known for speaking his mind, most recently as Lummi harvest policy representative.

"Randy was one of the Northwest Indian Fisheries

Commission's strongest advocates for treaty rights and resource protection," said Jim Anderson, former NWIFC executive director. "He never backed down and was a fierce warrior for his tribe and the resource. He had a wonderful sense of humor, was task oriented, gracious in his praise, and was the North Star, pointing out the direction the discussion – any discussion – should take."

Kinley took every opportunity to stress the importance of fishing to Lummi's *schelangen*, or way of life.

"We need to get our kids out fishing so they can understand the way it used to be and why we do what we do," he said in 2013 when the tribe began a tangle net fishery. "Future leaders need to remember where we came from, as it was taught to us."

In 2016, he testified before a state legislative committee about the importance of hatcheries.

"Do people understand what is at risk? Because it is not just the fishermen," he said. "We used to fish steelhead from all the way in November all the way until April. Now we don't even fish."

Kinley was active around the region in several organizations including the Puget Sound Partnership's Ecosystem Coordination Board. He also represented Lummi on the Puget Sound Salmon Recovery Council, the WRIA 1 Salmon Recovery Board Management Team, and the San Juan Islands Integrating Organization Oversight Committee.

Kinley also was active within the Lummi Nation, serving as a vice chair of the Lummi Council for eight years and spending more than 20 years on the Lummi Fish Commission.

"No one fought harder for our treaty rights," said Jamestown S'Klallam Chairman W. Ron Allen. "Randy, you were a 'hard-nosed' warrior and didn't give much. We are all better off having you in our governmental forums fighting for our natural resources."

Lyle Prince



Lyle Prince, the last living full-blooded citizen of the Jamestown S'Klallam Tribe, died Jan. 15, 2017. He was 89.

He was born Sept. 25, 1927 in Sequim to David Prince and Lizzie (Elizabeth) Hunter Prince. Lyle's father was the last traditional hereditary chief of the

S'Klallam Tribe.

Prince grew up on the family dairy farm at Jamestown, and lived on what remains of the family property until he moved into assisted living several years ago.

He attended Sequim High School, where he joined the Merchant Marines in 1945 during his junior year.

He married Pat Johnson in 1947. Prince served the Jamestown S'Klallam Tribe for decades, as tribal council chair from 1956-1966, and as a council member in 1979, and again from 1981-1990. He helped the tribe win the Indian Land Claims lawsuit, was involved with gaining federal recognition and developing programs to institute self-governance, and served on the JKT Oyster Board.

He served on the tribe's elders committee from 1993-2009 and often grilled salmon for tribal picnics for decades.

He is survived by his children Beth (Ed) Anders, Julie Powers, and Clifford (Kathy) Prince; five grandchildren; four great-grandchildren; and a large extended family.

Prince was preceded in death by his wife Pat; daughter Janice Eberle; and siblings Oliver "Buck" Prince, Lillian Prince Sullivan, Mildred Prince Judson, Mary Elizabeth "Betty" Prince Holden and Ruby Prince George.

Featured on the Northwest Treaty Tribes YouTube Channel



Not for Any Price, left and above, tells the story of the Lummi Nation's fight against the permitting of the Gateway Pacific Coal Terminal at the tribal village of Xwe'chie'Xen. Watch it at nwtt.co/notforanyprice.



North 40 Productions (4)

The animated video, *Salmon Problems*, above, follows up on *Tribal Fishing 101: Culture of Conservation*. It explains how multiple threats to habitat are having a catastrophic effect on salmon runs. Watch it at nwtt.co/salmonproblems.